AD-A118 773	AIR FORCE A USAF BIOENV JUL 82 R A AMRL-TR-75-	IFF. TH BALL	L RESEARCH LAB E DATA HANDROOK: C JONES	WRIGHT-PATTE VOLUME 172. H	TC F/G 20/1 USH-HOUETC((
1 or 9	E				1 5
		1			
T I					
			1 1		
	_				
			1 1 1		

AMRI-TR-75-50 Volume 172



USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

Volume 172

Hush-House Noise Suppressor (Aero Systems Engineering, Inc.) Far-Field Noise

July 1962



Assessment for mubble release: distribution continuity

otic file copy

AIR FORCE AMROSPACE MEDICAL RESEARCH LABORATORY AMROSPACE MEDICAL DEVISION AIR FORCE SYSTEMS COMMAND WRIGHT-PATTEMENT AIR FORCE MAIR, OND 46488

82 US 30 188

NOTICES

À

When US Government drawings, specifications, or other data are used for any purpose other than a definitely related Government procurement operation, the Government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise, as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

Please do not request copies of this report from Air Force Aerospace Medical Research Laboratory. Additional copies may be purchased from:

National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161

Federal Government agencies and their contractors registered with Defense Technical Information Center should direct requests for copies of this report to:

Defense Technical Information Center Cameron Station Alexandria, Virginia 22314

TECHNICAL REVIEW AND APPROVAL

AMRL-TR-75-50, Vol. 172

This report has been reviewed by the Office of Public Affairs (PA) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

FOR THE COMMANDER

HENNING E. VON GIERKE, Dr Ing

Director

Biodynamics and Bioengineering Division

Air Force Aerospace Medical Research Laboratory

SECURITY CLASSIFICATION OF THIS PAGE (When Date Entered)

REPORT DOCUMENTA		BEFORE CO	NSTRUCTIONS OMPLETING FORM
I. REPORT NUMBER	2. GOVT ACCESSION NO.	A RECIPIENT'S CA	TALOG NUMBER
AMRL-TR-75-50, Vol. 172	AD-A118773		
4. TITLE (and Subtitle)		5. TYPE OF REPO	T & PERIOD COVERED
USAF BIOENVIRONMENTAL NOISE DA Hush-House Noise Suppressor (A		Volume 17	2 of a Series
Engineering, Inc.) Far-Field N		6. PERFORMING OF	RG. REPORT NUMBER
7. AUTHOR(e)		8. CONTRACT OR	RANT NUMBER(4)
Robert A. Lee 1st Lt Thomas H. Rau 2nd Lt Carolyn Jones			
PERFORMING ORGANIZATION NAME AND A		10. PROGRAM ELEI AREA & WORK	MENT, PROJECT, TASK
Aerospace Medical Research Lab	_		
Aerospace Medical Division, Ai		60000=	7231-07-AA
Command, Wright-Patterson AFB,		62202F	7231-07-14
1. CONTROLLING OFFICE NAME AND ADDRES	SS	12. REPORT DATE	
Same as above		July 1982	
		13. NUMBER OF PA	GES
4. MONITORING AGENCY NAME & ADDRESS(IF	different from Controlling Office)	IS. SECURITY CLA	SS. (of this report)
		Unclassif	ied
		15a. DECLASSIFICA	TION DOWNGRADING

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Noise

Aircraft

Noise Environments

Hush-House

Bioenvironmental Noise

Suppressors

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The hush-house noise suppressor was made by Aero Systems Engineering of Texas, Inc. for acoustical suppression of various AF fighter/trainer aircraft during ground runup operations. This report provides measured and extrapolated data defining the bioacoustic environments produced by several aircraft/engines operating in the hush-house suppressor for various engine power configurations. Far-field data measured at 20 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for seven acoustic measures as function of angle and

DD 1 JAN 79 1473 EDITION OF 1 NOV 65 IS OBSOLETE

CONT

distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application," AMRL-TR-75(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Data are presented for the following aircraft/engines operating in the hush-house noise suppressor: F-4, F-15, F-16, F-105, F-106, F-111F and T-38 aircraft and the TF41-A-1, J79-GE-15, F100-PW-100, J75-P-19, J-75-P-17 and TF30-P-100 engines.

PREFACE

This report was prepared by the Biodynamic Environment Branch, Air Force Aerospace Medical Research Laboratory, under Project/Task 723107, Technology To Define and Assess Environmental Quality of Noise From Air Force Operations.

The authors gratefully acknowledge Mr. John Cole and Mr. Robert Powell for their assistance in preparing this report, Ms Anne Murney and SSgt Jorge Noverola of the Occupational and Environmental Health Laboratory at Brooks AFB, Texas for their assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Norma Peachey for assistance in typing this report.

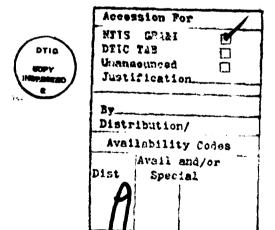


TABLE OF CONTENTS

	Page
INTRODUCTIONFAR-FIELD NOISE	ь
LIST OF TABLES	
LIGITOTIABLE	
1. Definitions of Acoustical Quantities	9
FAR-FIELD NOISE 2. F-4 Aircraft in the Hush House	
2.1 Test Conditions	10 11-14
3. F-15 Aircraft in the Hush House 3.1 Test Conditions	83 84-87
4. F-16 Aircraft in the Hush House 4.1 Test Conditions	
5. F-105 Aircraft in the Hush House 5.1 Test Conditions 5.2 Measured Sound Pragare Level	229
6. F-106 Aircraft in the Hush House 6.1 Test Conditions	284
7. F-111F Aircraft in the Hush House 7.1 Test Conditions	257
8. T-38 Aircraft in the Hush House 8.1 Test Conditions	448
9. TF41-A-1 Engine in the Hush House 9.1 Test Conditions	502
10. J79-GE-15 Engine in the Hush House 10.1 Test Conditions	558
11. F100-PW-100 Engine in the Hush House 11.1 Test Conditions	595

12.	J75-P-19 Engine in the Hush House 12.1 Test Conditions	651
	12.2 Measured Sound Pressure Level	652-654
13	J75-P-17 Engine in the Hush House	
	13.1 Test Conditions	709
	13.2 Measured Sound Pressure Level	710-712
1.4	TF30-P-100 Engine in the Hush House	
14.	14.1 Test Conditions	704
	14.2 Measured Sound Pressure Level	764 765-767
	LIST OF FIGURES	
FAR-	FIELD NOISE	
1.	Measurement Locations	8
2.	F-4 Aircraft in the Hush House	
Z.	2.1 Normalized Far-Field Noise Levels	15-18
	2.2 Overall Sound Pressure Level - Contours	19-22
	2.3 C-Weighted Sound Level - Contours	23-26
	2.4 A-Weighted Sound Level - Contours	27-30
	2.5 Perceived Noise Level - Contours	31-34
	2.6 Speech Interference Level - Contours	35-38
	2.7 Permissible Exposure Time - Contours	39-42
	2.8 Octave Band Sound Pressure Level - Contours	43-82
3.	F-15 Aircraft in the Hush House	
٠.	3.1 Normalized Far-Field Noise Levels	88-91
	3.2 Overall Sound Pressure Level - Contours	92-95
	3.3 C-Weighted Sound Level - Contours	96-99
	3.4 A-Weighted Sound Level - Contours	100-103
	3.5 Perceived Noise Level - Contours	104-107
	3.6 Speech Interference Level - Contours	104-107
	3.7 Permissible Exposure Time - Contours	112-115
	3.8 Octave Band Sound Pressure Level - Contours	116-155
4.	F-16 Aircraft in the Hush House	
	4.1 Normalized Far-Field Noise Levels	161-164
	4.2 Overall Sound Pressure Level - Contours	165-168
	4.3 C-Weighted Sound Level - Contours	169-172
	4.4 A Weighted Sound Level - Contours	173-176
	4.5 Perceived Noise Level - Contours	177-180
	4.6 Speech Interference Level - Contours	181-184
	4.7 Permissible Exposure Time - Contours	185-188
	4.8 Octave Band Sound Pressure Level - Contours	

5.	F-10	05 Aircraft in the Hush House	
	5.1		233-235
	5.2	Overall Sound Pressure Level - Contours	236-238
	5.3		239-241
	5.4		242-244
	5.5	Perceived Noise Level - Contours	245-247
	5.6	Speech Interference Level - Contours	248-250
	5.7		251-253
	5.8	Octave Band Sound Pressure Level - Contours	251-253 254-283
6.	F-10	06 Aircraft in the Hush House	
	6.1	Normalized Far-Field Noise Levels	289-292
	6.2	Overall Sound Pressure Level - Contours	293-296
	6.3	C-Weighted Sound Level - Contours	297-300
	6.4	A-Weighted Sound Level - Contours	301-304
	6.5	Perceived Noise Level - Contours	305-308
	6.6	Speech Interference Level - Contours	309-312
		Permissible Exposure Time - Contours	313-316
	6.8		317-356
			52, 600
7 .		1F Aircraft in the Hush House	
	7.1	Normalized Far-Field Noise Levels	363-367
	7.2		368-372
	7.3		373-377
	7.4	A-Weighted Sound Level - Contours	378-382
	7.5		383-387
	7.6		388-392
	7.7	Permissible Exposure Time - Contours	393-397
	7.8		398-447
٥	n oc	Airma Air Aka Hark Harra	
8.		3 Aircraft in the Hush House Normalized Far-Field Noise Levels	
	8.1	Normalized Far-Field Noise Levels	452-454
	8.2	Overall Sound Pressure Level - Contours	455-457
	8.3		458-460
	8.4	A-Weighted Sound Level - Contours	461-463
	8.5	Perceived Noise Level - Contours	464-466
	8.6	Speech Interference Level - Contours	467-469
	8.7	Permissible Exposure Time - Contours	470-472
	8.8	Octave Band Sound Pressure Level - Contours	473-502
^	9D13.4	4 A 4 Thurston for Alberthook Thomas	
9.		1-A-1 Engine in the Hush House	
	9.1	Normalized Far-Field Noise Levels	507-509
		Overall Sound Pressure Level - Contours	510-512
	9.3	C-Weighted Sound Level - Contours	513-515
		A-Weighted Sound Level - Contours	516-518
	9.5	Perceived Noise Level - Contours	519-521
	9.6	Speech Interference Level - Contours	522-524
	9.7		525-527
	9.8	Octave Band Sound Pressure Level - Contours	E00 557

10.	J79-0	E-15 Engine in the Hush House	
	10.1	Normalized Far-Field Noise Levels	561-562
	10.2	Overall Sound Pressure Level - Contours	563-564
	10.3	C-Weighted Sound Level - Contours	565-566
	10.4	A-Weighted Sound Level - Contours	567-568
	10.5	Perceived Noise Level - Contours	569-570
	10.6	Speech Interference Level - Contours	571-572
	10.7	Permissible Exposure Time - Contours	573-574
	10.8	Octave Band Sound Pressure Level - Contours	575-594
11.	F100-	PW-100 Engine in the Hush House	
	11.1	Normalized Far-Field Noise Levels	599-601
	11.2	Overall Sound Pressure Level - Contours	602-604
	11.3	C-Weighted Sound Level - Contours	605-607
	11.4	A-Weighted Sound Level - Contours	608-610
	11.5	Perceived Noise Level - Contours	611-613
	11.6	Speech Interference Level - Contours	614-616
	11.7	Permissible Exposure Time - Contours	617-620
	11.8	Octave Band Sound Pressure Level - Contours	621-650
12.	.175.E	2-19 Engine in the Hush House	
- 	12.1	Normalized Far-Field Noise Levels	
	12.2	Overall Sound Pressure Level - Contours	655-657
	12.3	C-Weighted Sound Level - Contours	658-660
	12.4	A-Weighted Sound Level - Contours	661-663
	12.5	Perceived Noise Level - Contours	664-666
	12.6	Speech Interference Level - Contours	667-669
	12.7	Permissible Exposure Time - Contours	670-672
	12.8	Octave Band Sound Pressure Level - Contours	673-678
	12.0	Octave Dana Gouna Tressure Level - Conwais	679-708
13.	_	-17 Engine in the Hush House	
	13.1	Normalized Far-Field Noise Levels	713-715
	13.2	Overall Sound Pressure Level - Contours	716-718
	13.3	C-Weighted Sound Level - Contours	719-721
	13.4	A-Weighted Sound Level - Contours	722-724
	13.5	Perceived Noise Level - Contours	725-727
	13.6	Speech Interference Level - Contours	728-730
	13.7	Permissible Exposure Time - Contours	731-733
	13.8	Octave Band Sound Pressure Level - Contours	734-763
14.	TF30	-P-100 Engine in the Hush House	
	14.1	Normalized Far-Field Noise Levels	768-770
	14.2	Overall Sound Pressure Level - Contours	771-773
	14.3	C-Weighted Sound Level - Contours	774-776
	14.4	A-Weighted Sound Level - Contours	777-779
	14.5	Perceived Noise Level - Contours	780-782
	14.6	Speech Interference Level - Contours	783-785
	14.7	Permissible Exposure Time - Contours	786-789
		Ostava Rand Saund Desegues Laval - Contours	#00 010

INTRODUCTION

The Aero Systems Engineering of Texas, Inc. hush-house is an air cooled suppressor designed to totally enclose an aircraft or engine during ground runup operations. This design permits operation of the aircraft or bare engine under controlled environmental conditions, protects the neighborhood area from noise and minimizes undesirable air pollution through use of an air cooled exhaust system. Soft energy absorbent interior walls reduce sound pressure levels on the aircraft structure and large induced air flow around the tail section cools aircraft surfaces. This one enclosure can serve many different aircraft types and provides an efficient enclosed work area for maintenance personnel.

This report provides measured and extrapolated data defining bioacoustic environments produced by the following list of aircraft and engines operating in this hush-house during ground runup operations: F-4, F-15, F-16, F-105, F-106, F-111F and T-38 aircraft and the TF41-A-1, J79-GE-15, F100-PW-100, J75-P-19, J75-P-17 and TF30-P-100 engines. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of these aircraft/engines operating in the hush-house noise suppressor.

This volume is one of a series published by the Air Force Aerospace Medical Research Laboratory (AFAMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during ground operations of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Refer to Volume 1 (reference 1) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AFAMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to AFAMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

 Cole, John N., USAF Bioenvironmental Noise Data Handbook Volume 1: Organization, Content and Application, AMRL-TR-74-50 (1), Air Force Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

FAR-FIELD NOISE

Measurements

AFAMRL acquired the far-field data during a 1-2-hour test period for each aircraft/engine operating in the hush-house, thus keeping similar meteorological conditions. Figure 1 shows the hush-house and its orientation relative to 20 microphone measurement sites on a 100 meter (328 feet) semicircle. The center of the front half of the semicircle was located on the ground directly beneath the intersection of the aircraft/engine centerline and a plane passing through the exhaust nozzle. The center of the back half of the semicircle was located on the center of the exhaust stack. This two center approach was used because the hush-house was designed with two main exit ports for the noise generated, the air inlets and the exhaust stack. These two exit ports are located a relatively large distance apart (over 100 ft.) causing the hush-house to act like a two point noise source. In order for this source to be measured as a point source we would have had to have taken the noise measurements at a much larger distance than the 100 meter radius. Measuring at a farther distance would have caused problems because the noise levels would have been reduced and therefore too close to the ambient noise environment to make a clear determination of the source characteristics. The 1/3 octave band spectra for the 90F and 90B positions were arithmetically averaged together to present only single values for the 90° point. This approximation was made because our OMEGA programs only allow 19 angles to be presented. This method for averaging does not significantly affect the values at any of the distances presented.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

Table 1 presents a list of definitions of the acoustical quantities and terminology used in this report.

Tables X.1 provide cockpit readouts of engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in these tables are the surface meteorological conditions during acquisition of the noise data for each aircraft/engine operating in the hush-house.

Tables X.2 list the overall and 1/3 octave band SPL measured at the far-field locations under meteorlogical conditions at the time of each test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorlogical conditions (15°C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figures X.1 which provides a compact summary of the far-field noise characteristics of each aircraft/engine operating in the hush-house noise suppressor in a standard format.

Estimates of the noise levels for intermediate power settings (e.g., 90% RPM) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures X.2 through X.8 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low.

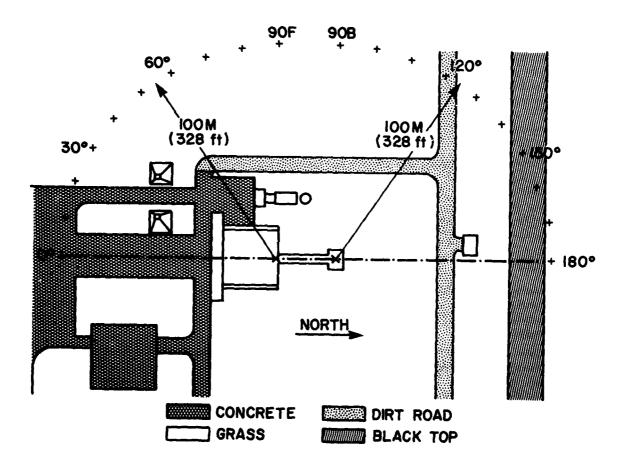


Fig. 1 Hush-House Far-Field Measurement Locations

TABLE 1 DEFINITIONS OF ACOUSTICAL TERMS

OASPL	Overall Sound Pressure Level, Energy Summation of Sound Pressure Levels In All 1/3 Octave Bands With No Frequency Weighting Applied
OASLC	C-Weighted Overall Sound Level, in dBC, As Specified in American National Standards Institute (ANSI) Standard Number S1.4(R1976)
OASLA	A-Weighted Overall Sound Level, in dBA, As Specified in ANSI Standard Number S1.4-(R1976)
PNLT	Tone Corrected Perceived Noise Level As Specified in Federal Aviation Regulation (FAR) Part 36
PSIL	Preferred Speech Interference Level
dB	Decibel, Logarithmic Ratio

TABLE 2.1

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS F-4 AIRCRAFT IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-702-001

Aircraft Engine Operation	Single !	Engine
Idle	65 % RI 1100 LBS 380 EGT	/HR FF
85%	85 % RI 3000 LBS 430 EGT	/HR FF
Military Power	98.8 % RI 7000 LBS 650 EGT	/HR FF
Afterburner Power	98.8 % RI 7000+ LBS 650 EGT	/HR FF
Meteorology		
Temperature Bar Pressure Rel Humidity	34 C .737 M H 51 %	_
Wind - Speed - Direction	3 M / S 160 Deg	Sec (6 Kts)

TABLE: 2.2	MEASURED 1/3 OCTAV DISTANCE	E BAN	D		LEVEL	(D8))	OENTI OMEGA	1.4	
NOISE SOL	URCE/SUBJE	CTI		(0	PERATI	ONI						ROLOGY				-	RUN	-	2-001
	RCRAFT IN			(IOLE			RPH))	TEM		=	34 C)			
	ASE HUSH H			(SINGL)		PRESS			H5)	26 00	T 61	
	-15 ENGINE ELD NOISE			(GROUN					}	KEL	HUMID	=	51 X)	PAGE	2	
FREQ	_									(DEGR									
(HZ)	0	10	50	30	45	50	60	70	9 0	90	100	110	120	130	148	150	150	170	180
12.5	5 59	59	63	66	75	73	74	74	7 a	68	64	70	68	68	68	68	68	68	63
16	60	60	62	66	68	69	70	71	67	67	63	68	66	66	66	66	66	66	66
20	60	60	62	64	70	70	70	69	67	67	63	68	65	65	65	65	65	65	65
25	61	61	60	63	68	69	70	71	54	65	63	67	6+	54	64	64	64	64	64
31.5	5 69	69	63	67	66	67	70	73	73	71	69	67	65	65	65	65	65	65	65
40	70	70	63	72	68	68	73	77	74	74	70	71	67	67	67	67	67	67	67
50	59	59	56	59	64	64	64	63	Ġ4	65	62	61	53	58	58	58	5€	58	58
63	55	55	55	56	61	59	60	61	61	62	6	60	60	68	60	60	60	60	60
8 0	53	53	53	58	64	58	59	61	56	58	61	57	59	59	59	59	59	59	59
100	55	55	53	52	54	54	54	>4	52	57	58	59	53	59	59	59	59	59	59
125	53	5 3	50	51	50	52	52	52	51	55	58	58	53	59	59	59	59	59	59
168	48	48	45	53	50	45	50	54	45	48	53	53	57	57	57	57	57	57	57
200	48	48	43	43	45	41	42	43	→3	42	46	48	52	52	52	52	52	52	52
2 5 0	46	46	42	42	43	39	43	46	41	41	44	45	48	48	48	+8	48	48	6.8
315	44	44	38	40	43	37	42	47	4 D	39	42	42	47	47	47	47	47	47	47
40 0	4.0	40	35	38	42	36	41	45	38	36	39	39	45	45	45	45	45	45	45
500	40	40	36	37	÷ 0	37	38	40	37	35	.79	39	43	43	43	43	43	43	43
631	39	39	34	33	36	36	36	36	37	36	39	39	44	44	44	44	44	44	44
800	37	37	31	32	34	34	35	35	37	36	→ 0	40	4.4	44	44	44	44	44	44
1000	38	38	32	31	34	3+	34	35	37	36	43	40	45	45	45	45	45	45	45
1250	38	38	33	31	33	34	34	34	37	36	42	38	43	43	43	43	43	43	43
1600	39	39	36	34	36	30	35	3₩	37	37	41	39	42	42	42	42	42	42	42
2000	39	36	35	33	35	37	35	33	35	36	43	38	41	41	41	41	41	41	41
250 0	3+	34	34	31	32	37	34	30	32	32	35	35	37	37	37	37	37	37	37
3150	31	31	25	25	29	30	30	29	31	29	33	32	35	35	35	35	35	35	35
4000	29	29	24	24	29	30	29	28	23	27	30	29	31	31	31	31	31	31	31
5000	27	27	22	24	29	31	29	27	28	26	28	27	31	31	31	31	31	31	31
6300	26	26	22	23	29	31	28	26	29	25	28	27	28	28	58	28	28	28	28
8000	25	25	23	24	28	29	28	28	23	27	31	29	25	28	28	28	88	28	28
10000	5.0	20	52	24	27	28	27	26	32	26	31	28	26	26	56	26	26	26	26
OVERALL	74	74	71	75	79	70	79	81	73	78	75	77	75	75	75	75	75	75	75

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

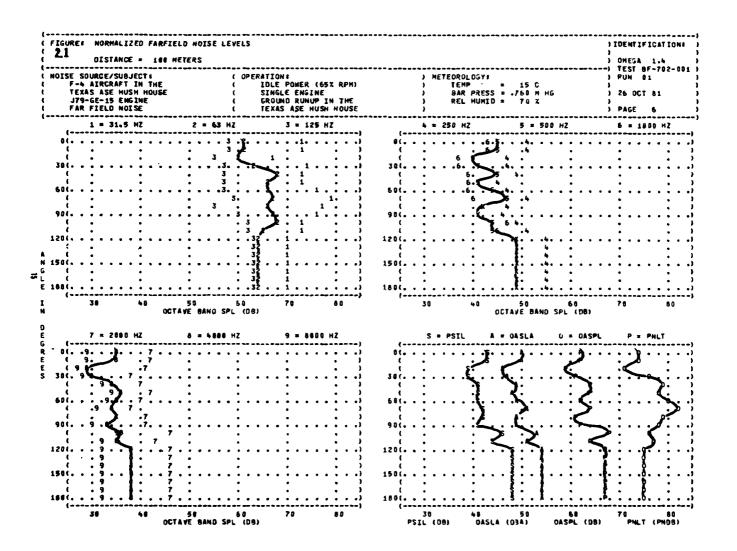
2.2 1/	ASURED S	BAN	<u></u>		FEAEF	(80))	DENTI		
OISE SOURC	STANCE = E/SUBJEC			(0	PERATIO) H	ETEO	ROLOGY	 I)	OMEGA TEST RUN	BF-70	
F-4 AIRCR	AFT IN T	HE		(85% RF)	TEM		=	34 C)			
TEXAS ASE	HUSH HO	USE		(SINGLE)		PRESS			H3		56 OC	T 81	
TEXAS ASE J79-GE-15 FAR FIELD	HOISE			(_			,	REL	HUNID	=	51 X)	PAGE	2	
FREQ								A!	NGLE	(OEGR	EES)							~~~~	
(HZ)	0	16	20	30	40	50	60	70	80	90	100	116	128	130	140	150	160	170	180
12.5	74	72	72	72	73	75	71	75	73	74	79	78	78	78	78	78	76	78	78
16	71	72	72	72	72	71	72	74	78	76	79	78	78	79	79	79	79	79	79
20	70	71	71	71		73	74	73	75	75	80	88	78	79	79	79	79	79	79
25	69	68	66	64		63	69	71	69	71	74	72	76	74	74	74	74	74	74
31.5	73	68	68	67		66	68	71	73	72	71	71	71	73	73	73	73	73	73
40	74	70	71	72		69	70	74	75	73	79	72	71	72	72	72	72	72	73
50	70	66	65	64		68	69	70	70	69	66	68	67	69	69	69	69	69	69
63 80	66 67	62 65	62 63	63 60		65 65	67 64	68 65	65 65	69 64	55 58	67 69	63 67	68 66	68 66	68 66	68 66	68 66	6 (6 (
100	62	61	61	60		68	60	59	97 57	61	56 66	67	63	66	66	66	66	66	66 66
125	60	60	59	58		58	54	56	21 54	68	54	64	67	64	64	64	64	64	64
160	57	55	53	51		51	50	50	49	53	57	61	52	57	57	57	57	57	57
200	52	47	46	49		48	45	43	43	48	48	51	55	52	52	52	52	52	5
25 0	47	45	45	45		42	40	40	41	43	46	49	50	50	50	50	50	50	5
315	51	46	48	50	47	43	38	43	42	42	45	46	49	48	48	48	48	48	46
408	47	43	42	41	41	41	37	42	39	41	44	44	49	45	45	45	45	45	45
500	47	45	43	41		46	42	44	46	42	43	44	46	46	46	46	46	46	46
630	44	42	41	39		43	42	42	41	43	43	45	48	48	48	48	48	48	46
800	41	38	37	36		40	41	42	39	42	43	45	49	5 8	50	50	50	50	50
1000	4 0	38	36	35		39	38	40	36	38	41	43	45	49	49	49	49	49	49
1250	42	41	39	37	• •	40	36	38	35	36	39	42	45	50	50	50	58	58	50
1600	42	40	36	36		38	37	36	34	37	38	41	43	50	50	50	50	59	51
2000	42	41	40	39		39	36	36	34	36	36	41	41	48	48	48	48	48	48
2500	40	42	40	38		38	36	35	32	35	37	37	37	43	43	43	43	43	43
3150	32	34	32	29		31	31	32	30	32	35	35	34	39	39	39	39	39	39
4000 5000	30 31	28 29	27 28	26 26		28 29	28 29	31 32	30 31	30 30	29 29	31 31	31 30	35 34	35 34	35 34	35 34	35 34	39
6300	31 31	29	27	25		30	29	32	31 31	30	29	31 26	3 U 2 S	34 31	34	34	34	31	3:
8000	29	30	27	25		29	29	32 32	31	31	29	26 28	27	31	31	31 31	31 31	31	31
19000	27	25	25	24		27	27	30	29	30	28	28	26	29	29	29	29	29	29
	• ′	.,	6.7	-	£.,	٠.		-	63	30	20	20	20		.,	.,	.,	. ,	4 3
OVERALL	81	79	79	79	79	80	8.0	82	83	82	85	85	85	85	85	85	85	85	85

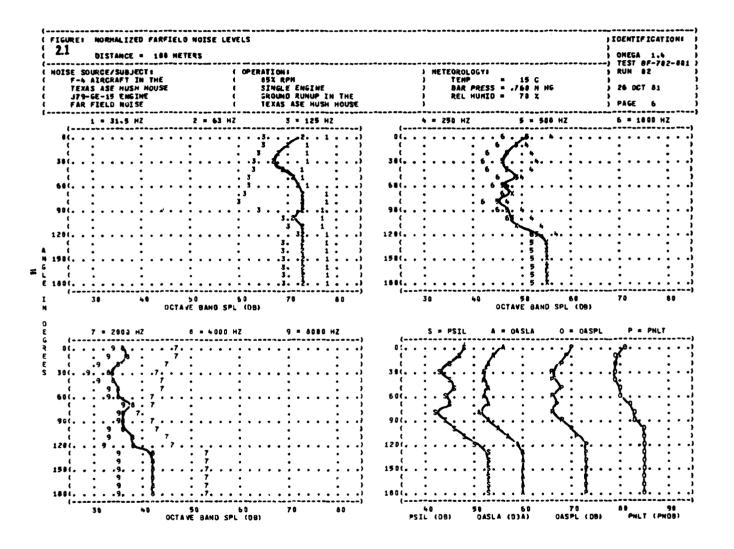
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

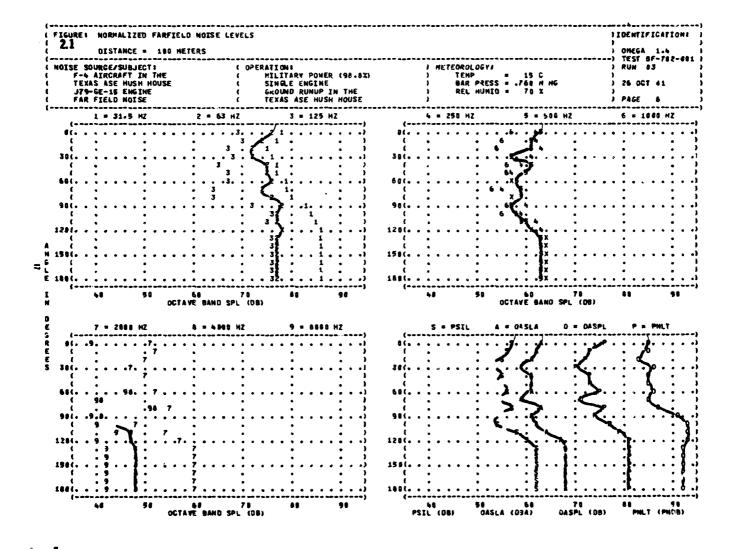
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NUISE.

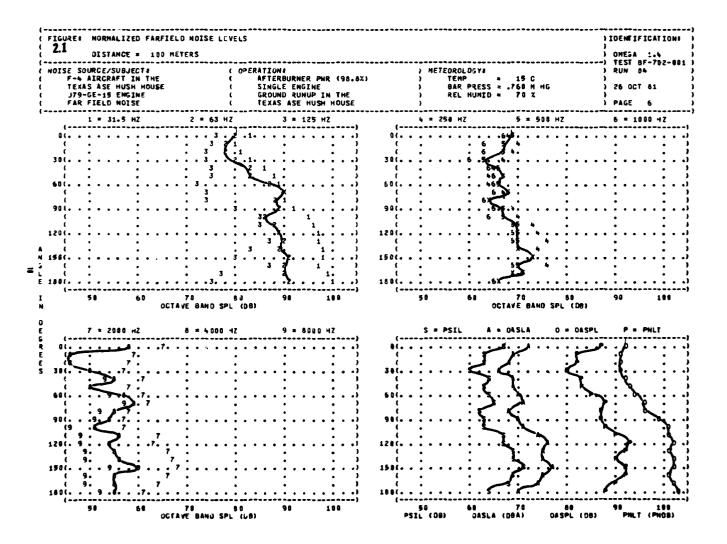
	.2 1/	ASURED S 3 DCTAVE Stance =	BAND)		TE AET	(98))	COENTI	-	•
F	ISE SOURG F-4 AIRCR TEXAS ASE	E/SUBJEC	T I HE		(01	FERATIO AFTERB	URHER					ETEOR TEMP		:	34 C)		BF-70 04	
,	J79-GE-15 FAR FIELD	ENGINE	1035		((SINGLE GROUND TEXAS	RUN	IF IN			}		PRESS HUMIO		51 %	H.	,))	26 OC	2	
-	FREQ									GLE (neco									
	(HZ)	G	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	18
	12.5	8.8	8.8	86	86	86	86	67	85	85	91	93	93	93	43	92	91	93	92	9:
	16	86	85	84	85	84	8+	85	89	95	91	94	93	9.	95	94	95	95	95	g,
	20	82	82	A5	84	85	87	66	87	39	93	94	94	96	94	94	95	94	95	ģ
	25	78	75	79	80	82	65	86	86	87	90	94	93	95	34	95	35	94	96	9
	31.5	77	74	72	77	79	81	82	82	ô5	85	86	91	91	91	92	35	91	93	9
	40	80	75	74	77	79	78	84	86	63	85	85	87	87	87	98	91	87	91	9
	50	77	76	76	7 E	81	79	85	٥9	87	87	ò 1	85	86	89	87	30	89	89	8
	63	73	71<	71<	75	76	76	79	81	7 🕏	62	61	61	84	33	80	81	83	* 3	8
	80	75	71	69	72	73	77	76	78	77	76	81	82	61	80	7.7	86	80	78	7
	100	74	70	71	71	72	72	69	71	70	76	82	81	84	84	61	76	84	74	7
	125	70	71	68	69	70	71	66	69	59	75	80	81	86	8.5	78	75	82	72	7
	160	67	68	66<	66.		61<	64<	66<	64<	71	72	76	83	76	73	70	76	64<	6
	208	64	64	60	63	62	61	60	64	61	66	66	70	72	75	69	67	75	61	6
	2 5 0	60	66	62	62	59	57	59	60	59	64	64	66	67	08	69	67	68	64	6
	315	65	65	66	60	60	55	59	60	55	61	63	64	61	65	66	68	65	67	6
	400	6+	60	64	58	61	57	59	62	59	62	62	65	64	64	64	67	64	66	6
	500	65	63	62	59	61	63	62	64	58	60	62	65	65	65	66	67	65	65	5
	630	63	61	59	58	61	63	62	63	0 0	63	61	65	66	66	66	09	66	66	6
	800	62	57 <	57<	55		60	62	62	01	62	61	65	65	65	67	69	65	64	6
	1000	61	56 <	55<	54		59<	58<	59<	36<	57<	58<		62	02	65	65	62	63	5
	1250	62	60	59	55		60	58	58	54<	57<	56<		62	63	64	67	63	65	5
	1600	00	57	55	53		55	57	58	53<	54<	54<		60	64	65	66	64	61	5
	2000	62	54	53<	53		52<	56	58	53<	51<	51<		53	61	60	61	61	57	5
	2500	55	48 <	49<	50		49<	53	54	50 ₹	49<	49<		54	54	55	59	54	56	5
	3150 4000	56 50	42<	42<	46		47<	>2	54	50 <	49<	47<		51<		52	57	52	52	5
		50 42<	39 < 40 <	39<	44		43<	51 50	54	49	48	44<	• •	45<		49	54	48	48	4
	5000		40 <	39<	43		42<	5 U	53	50 43	48	444		47	49	47	54	49	46 45	
	6300 8000	40< 33<	40 < 37 <	36< 37<	48	50 < 47	33<	91 49	54 52	45	47 47	42 42<	45	44	46 45	45 64	50 50	46 45	45 45	ì
		35<	35 <	34<	37	47	37	48		46			44 41	42			47	42	42	- :
3	10000	375	37 4	344	31	47	31	40	51	40	44	41	41	42	42	41	4/	42	42	•
	DVERALL	92	91	91	91	92	93	94	95	95	98	100	100	102	101	191	102	191	102	10

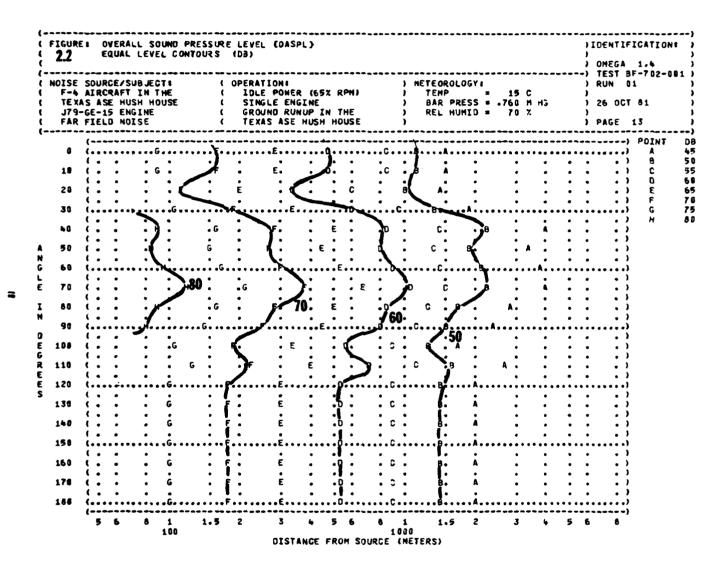
< LEVEL CORRECTED TO REMOVE SACKGROUND/ELECTRONIC NOISE.

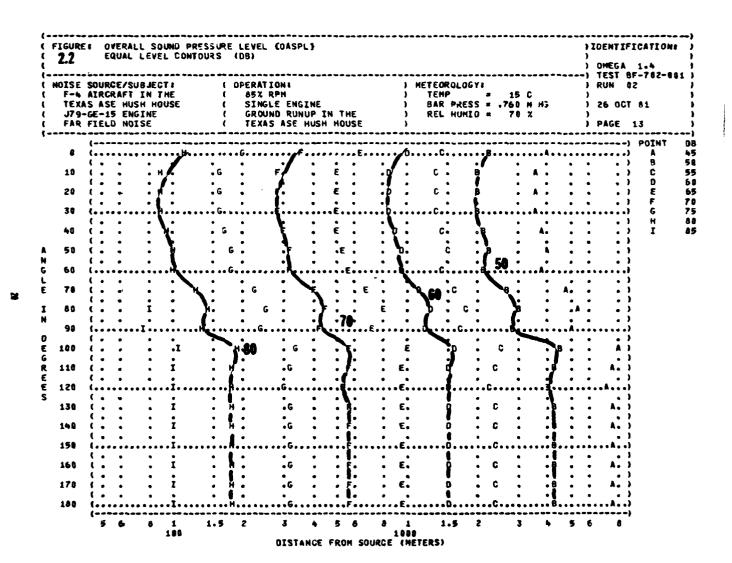


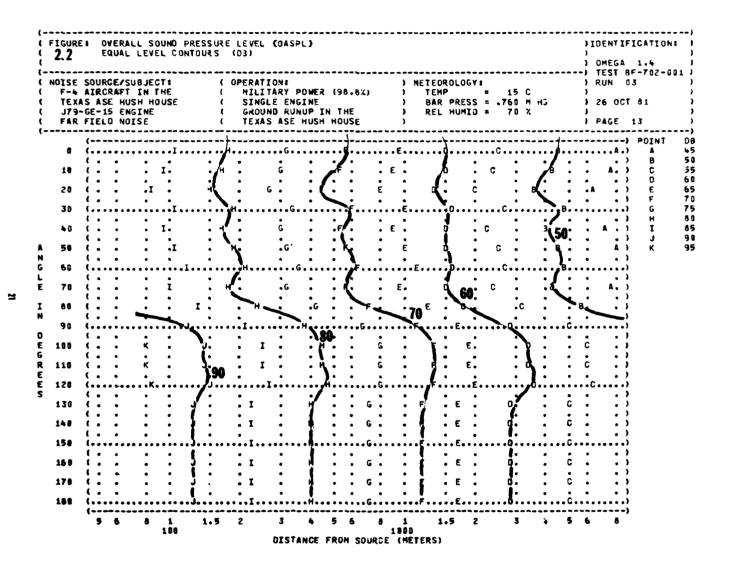


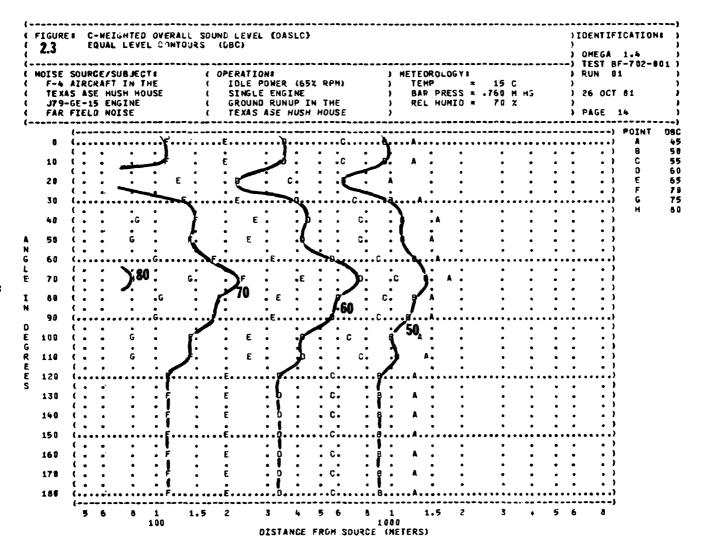




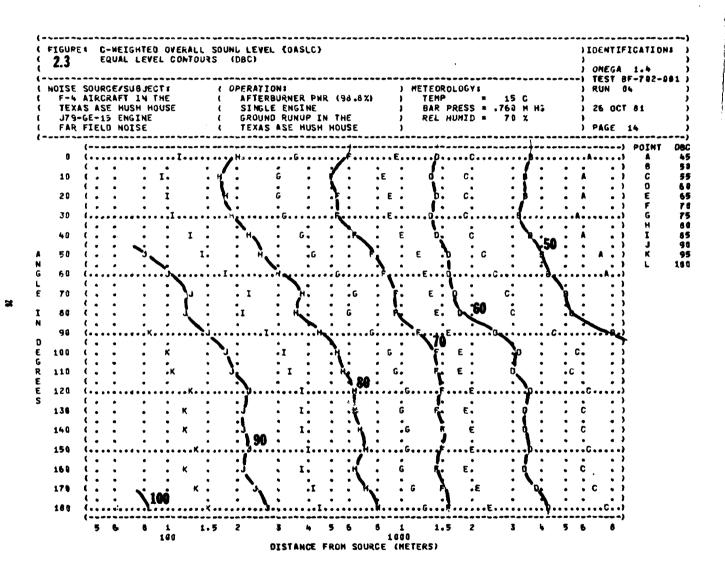


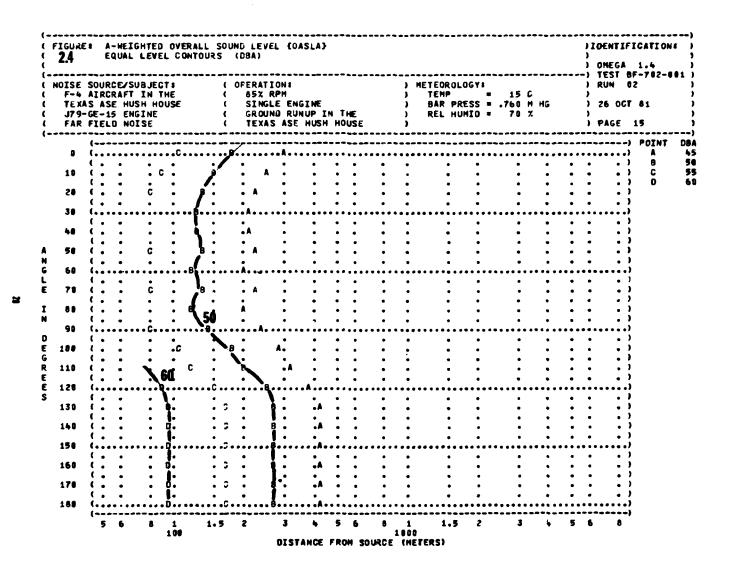


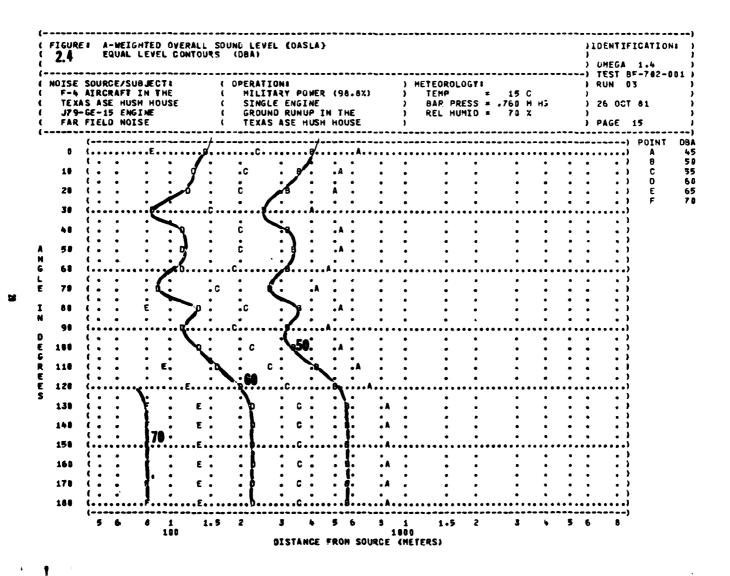


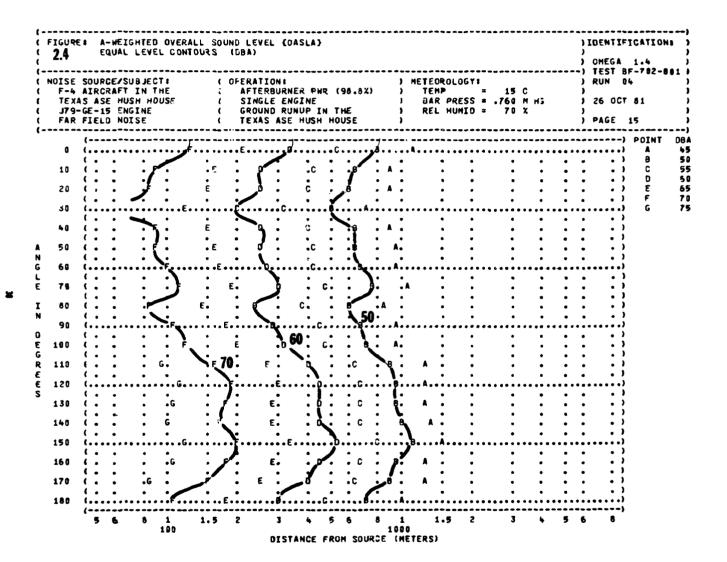


ISE S F-4 / TEXAS J79-0 FAR F	IRCR S ASE E-15	AFT I HUSH ENGI	N TH HOU NE	IE JSE	(SIN	RPM SLE EN JNO RL	HUP I	N TH) 1	TEOROL TEMP BAR PEREL HI	RESS	= 1 ¹	5 C 0 M H 0 X	iG	1	26 00 PAGE	BF-702-0 02 GT 61
9 (10 (20 (30)		••••		6			E		0	0	C			A	••••	•	•			POINT A
50 50 60		•		6		, ,	E		0.00		.c .c		50		••••	• • • • • • • • • • • • • • • • • • •	•			H)))
76 80 90				•	s. G		[70	.E	E.			c 		A	A	•	•))))
.00 .10 .20		•		80	. G	•	Ĭ: ₹ 	•	Ε Ε .Ε	•		•	C .	В	A 	À	•))))
.30 .40 .50		•				•			Ē E .E	•		•	C .		••••	Ä Ä Å	•))))
.70 .80		•		†• • •	. G	•	, ,	•	Ē E	•		- • •	C .		• • • • •	A A	•)))

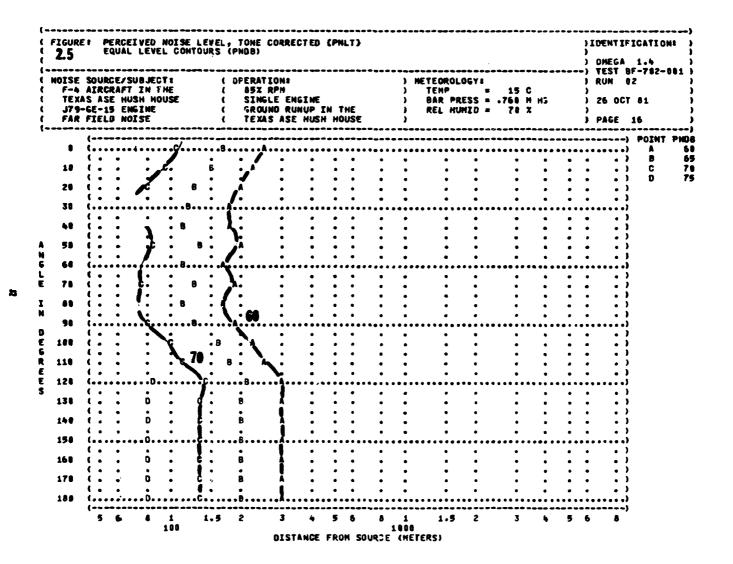




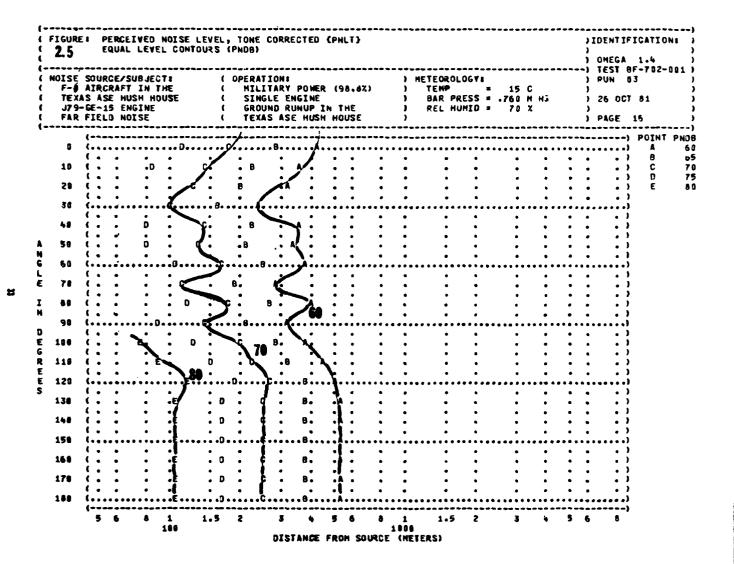


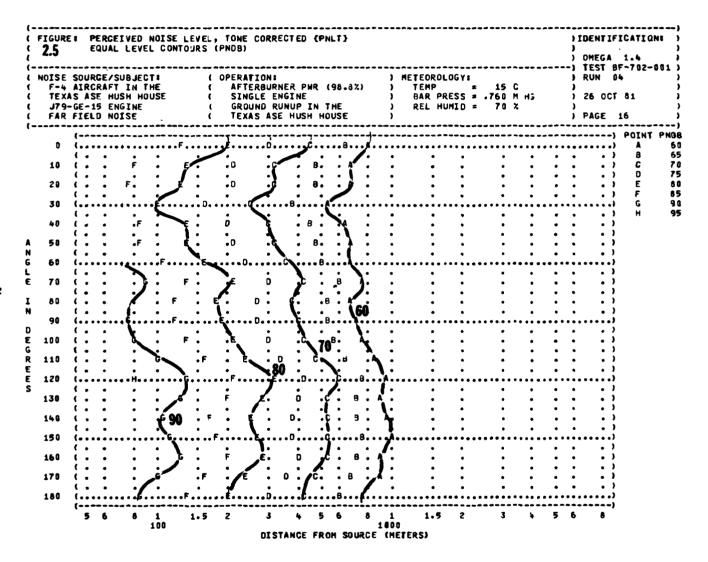


2.5 EQUAL LEVEL CONTOUR OISE SOURCE/SUBJECT: F-4 AIRCRAFT IN THE TEXAS ASE HUSH HOUSE J79-GE-15 ENGINE FAR FIELD NOISE					 ((() METEOROLOGY:) TEMP = 15 C) BAR PRESS = .760 M H5) REL HUMID = 70 %) OMEGA 1.4 -) TEST BF-702-01) RUN 01) 26 OCT 91) PAGE 16		
0 (•	3			•		•						 	 •				-) POINT (-) A) B) C		
20 (36 (•	• •	: (۲ نمر		· •	•	••••		•	•		•	, , , , , , , , , , , , , , , , , , , ,			•	• •	: 1 .)		
40 (50 (•	•	. B)	•	:	•	:	•	•	•	• •		• • •	•	•))))		
70 (••••	8		>: >: 50:	•	•••••	•••••	•	•	•	• • • • •	•	• • • • • • • • • • • • • • • • • • •	• • • • • • •	•	•	•	.)) ,		
80 (90 (•	•	 ~70		·	 \:	•	•	:	:		· · • • • • •	•	, , , , , , , , , , , , , , , , , , , ,	• • • • • • • •	•	•	• •	, 1 .)		
110	•	: `	ير بر	•	ا	ノ :	•	:	•	•	•	•	•	•	•	:	•)))		
130	:		: :	в	•] :	•	••••	•	•	•		•	• • • • • • • • • • • • • • • • • • •	• • • • • • •	•		•)))		
150	:		: :	. B	• • • • • • • • • • • • • • • • • • • •	f: -}:		. : . :	•	•	•	, , , , , , , , , , , , , , , , , , , ,	•	, , , , , , , , , , , , , , , , , , , ,		•	•	• •	,) .}		
160	•		} . •	. 8 . 3	:	Î.	•			:	•	1 1	•	•	•		•		; ;		
188	•	•	<u> </u>	• ••••B	· • • • • • •	.A	•	• • • • • •	•	•	•		.5	, 	• • • • • •	•	•	•	, ,) -}		

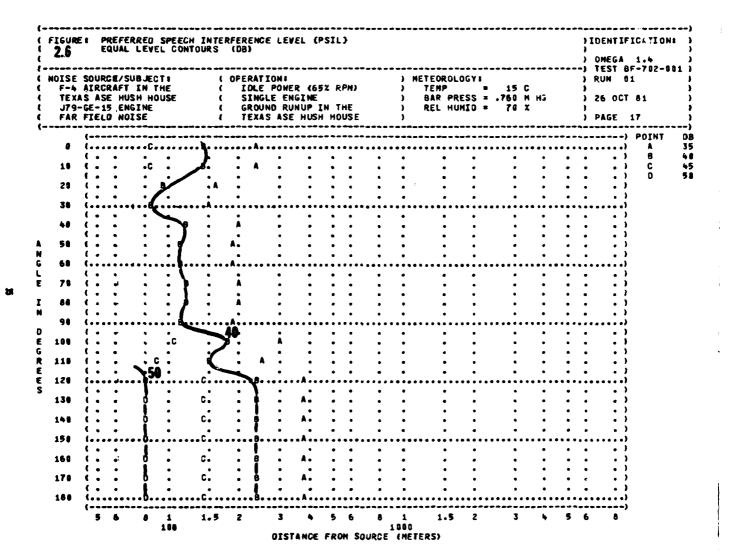


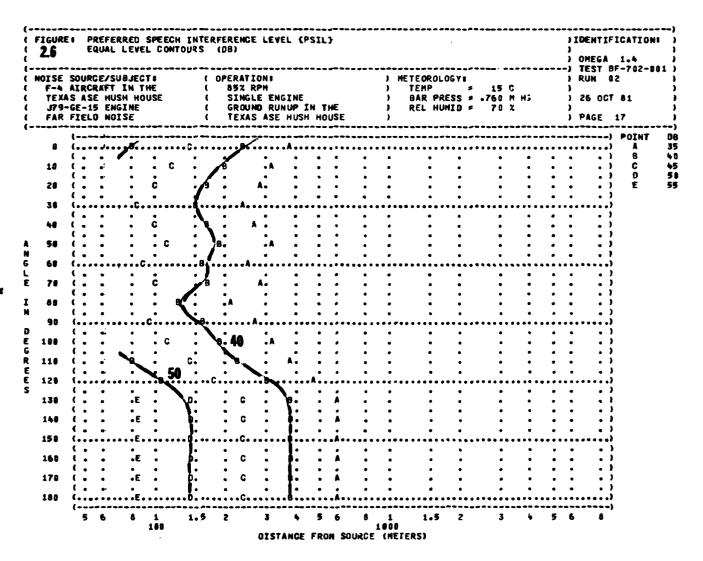
....

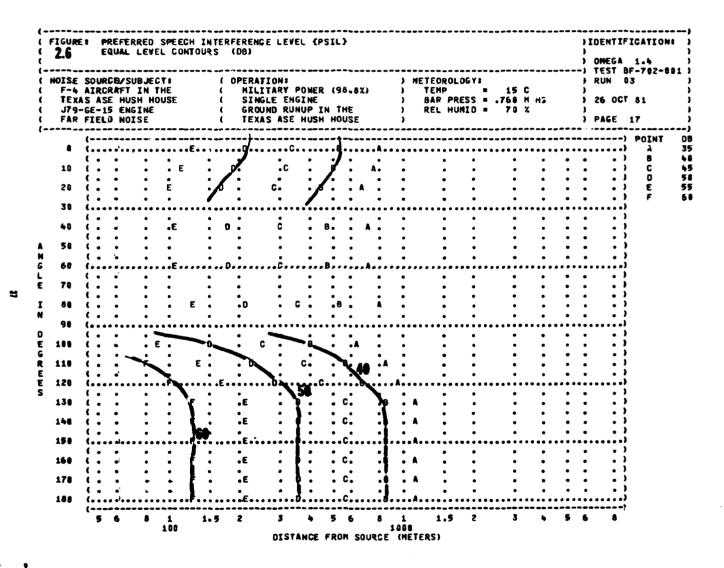


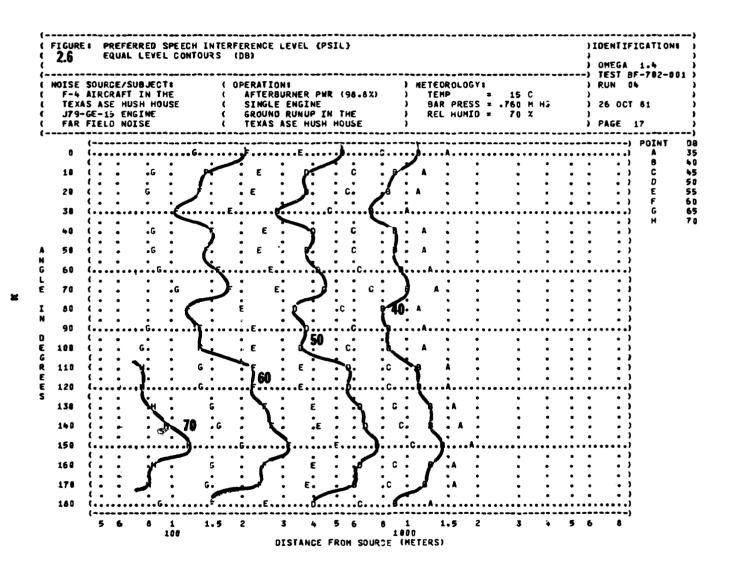


*









```
FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
2.7 EQUAL TIME CONTOURS (MINUTES)
                                                                                                               ) I DENTIFICATION :
                                                                                                               ) OMEGA 1.4
                                                                                                                 TEST BF-702-001
NOISE SOURCE/SUBJECT#
                                   ( OPERATIONS
                                                                           METEOROLOGY:
                                                                                                                 RUN 01
  F-4 AIRCRAFT IN THE
TEXAS ASE HUSH HOUSE
J79-GE-15 ENGINE
FAR FIELD NOISE
                                                                             TEMP = 15 C
BAR PRESS = .760 H H3
REL HUMID = 70 %
                                       IDLE POWER (65% RPM)
SINGLE ENGINE
GROUND RUNUP IN THE
                                                                                                              ) 26 OCT 81
                                        TEXAS ASE HUSH HOUSE
   0 <
  10 <
  28 <
                       PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
  40 <
                       AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN
                                                                                           75 METERS
                       FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
  60 <
                       UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
  784
                             NO PROTECTION
  80<
                             MINIMUM OPL EAR MUFFS
  98 <
                             AMERICAN OPTICAL 1708 EAR MUFFS
 100<
 110<
                             V-51R EAR PLUGS
 120<
                             COMFIT TRIPLE FLANGE EAR PLUGS
                             H-133 GROUND CONNUNICATION UNIT
 130 <
 148<
 150 <
 160<
 170<
                                               3 4 5 6
                                                                  8 1
1000
                                                                                1.5
                                                                                                          5 6
                               1.5
                       100
                                              DISTANCE FROM SOURCE (METERS)
```

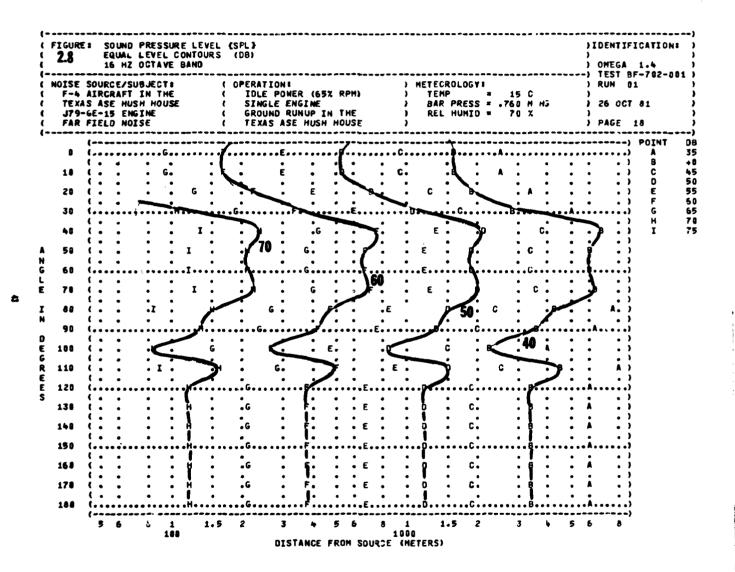
FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) 27 EQUAL TIME CONTOURS (MINUTES)) IDENTIFICATIONS 2.7 OMEGA 1.4 TEST BF-782-001 NOISE SOURCE/SUBJECT: F-4 AIRCRAFT IN THE TEXAS ASE HUSH HOUSE J79-GE-15 ENGINE FAR FIELD NOISE (OFERATION:) METEOROLOGYS RUN 02 STATIONS 85% RPM SINGLE ENGINE GROUND RUNUP IN THE TEXAS ASE HUSH HOUSE TEMP = 15 C BAR PRESS = .760 M H3 REL HUMIO = 70 %) 26 ént '61 PAGE ? . 10< 20< 38 < PERSONNEL HAY BE EXPOSED UP TO 968 HINUTES PER DAY 40 < AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 HETERS 58 < FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT) 68 < UNDER THE FOLLOWING EAR PROTECTION CONDITIONS: 78< 80< NO PROTECTION MINIMUM QPL EAR MUFFS 98< 100< AMERICAN OPTICAL 1700 EAR HUFFS V-51R EAR PLUGS 110< COMFIT TRIPLE FLANGE EAR PLUGS H-133 GROUND COMMUNICATION UNIT 130< 148< 158< 160 < 178< 1884 5 6

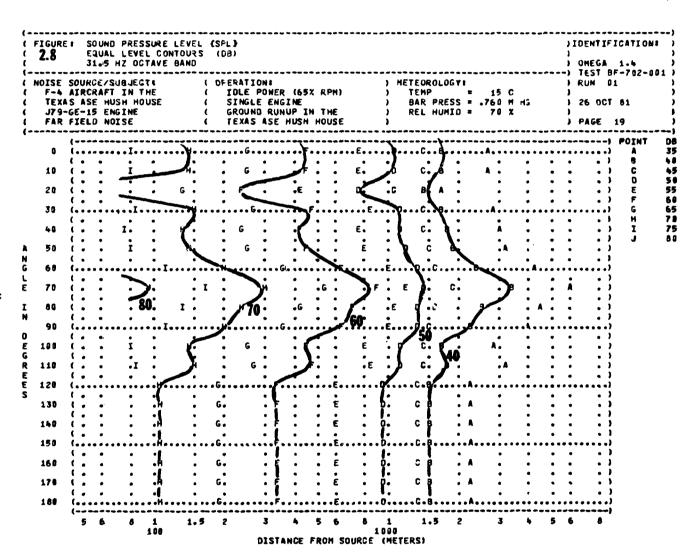
DISTANCE FROM SOURCE (METERS)

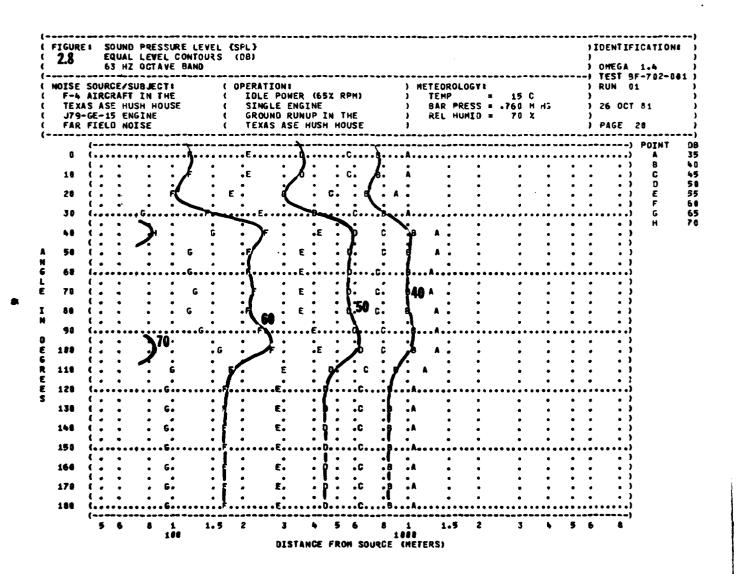
2.7	EQUAL TIME CONTOURS	(MINUTES)	PER DAY (AFR 161-35, JULY 73))) ONEGA 1.4
OISE S F-4 A	OURCE/SUBJECTS IRGRAFT IN THE	(OPERATION: (MILITARY POMER (98.8%) (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY:) TEMP = 15 C) RUN 03
0<				·)
10<				,
28<	· ·) }
30<))
40<	PERSONNEL	MAY BE EXPOSED UP TO 960 HI	NUTES PER DAY)
50<	AT ALL DI	STANCES FROM SOURCE EQUAL TO	OR GREATER THAN 75 HETERS))
68<	FOR ALL A	NGLES EVALUATED (INDICATED B	Y < AT LEFT)	3
75<	UNDER THE	FOLLOWING EAR PROTECTION CO	INDITIONS4	1
80 < 0	NO F	ROTECTION) }
90 < 0	MINI	MUH QPL EAR MUFFS) }
100<	AHER	ISAN OPTICAL 1700 EAR HUFFS)
110<	V-51	R EAR PLUGS		,
128<	COMF	IT TRIPLE FLANGE EAR PLUGS)
130<	H-13	3 GROUND COMMUNICATION UNIT		,
140<				;
150< (,
169<))
170<))
189<				,
•	5 6 8 1 1.	5 2 3 4 5 6	8 1 1.5 2 3 4	5 6 6

	EQUAL TIME CONTOURS SOURCE/SUBJECTS AIRCRAFT IN THE	(OPERATION: (AFTERBURNER PWR (98.8%)) METEOROLOGY:)) OHEGA 1.4) TEST 3F-702-0() RUN 04
J79-	S ASE HUSH HOUSE GE-15 ENGINE FIELD NOISE	(SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) BAR PRESS = .760 H H5) REL HUNID = 70 %)) 26 OCT 51)) PAGE 7
0 <	(· - · · · · · · · · · · · · · · · · · ·)
10<	((3
28<	(()
30 <	()
40 <	C PERSONNEL	. HAY BE EXPOSED UP TO 960 HI	NUTES PER DAY)
50<	(AT ALL DI	ISTANCES FROM SOURCE EQUAL TO	OR GREATER THAN 75 METERS)
60<	((FOR ALL #	ANGLES EVALUATED (INDICATED B	Y < AT LEFT))
70<	C UNDER THE	FOLLOHING EAR PROTECTION CO	ONDITIONS:	,
89<	E NO F	PROTECTION) }
98<	(C Hini	HUN QPL EAR NUFFS		;
100<	(AMES	RICAN OPTICAL 1788 EAR HUFFS)
116<	{ {	LR EAR PLUGS		3
128<	(COMP	FIT TRIPLE FLANGE EAR PLUGS		;
130 <	((H-13	33 GROUND COMMUNICATION UNIT)
L48<	(()
150<	((}
168<	(())
L78<	(()
180<	(())
	5 6 8 1 1	.5 2 3 4 5 6	8 1 1.5 2 3 4	5 6 8

.

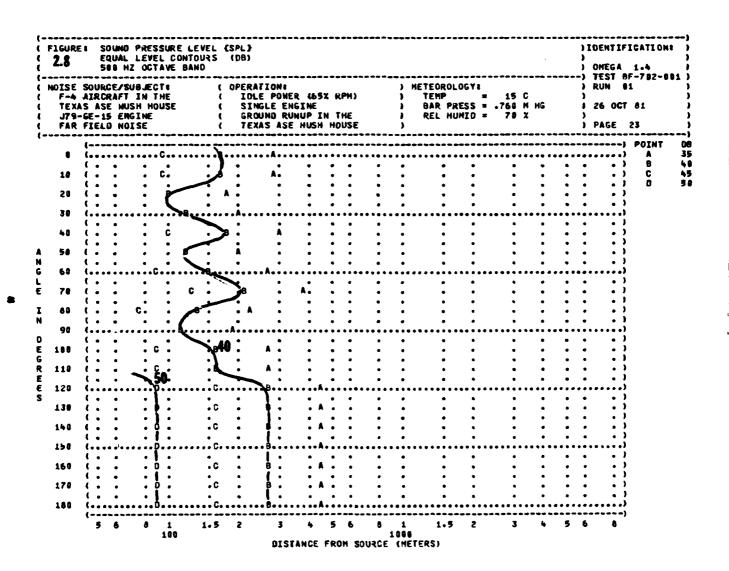


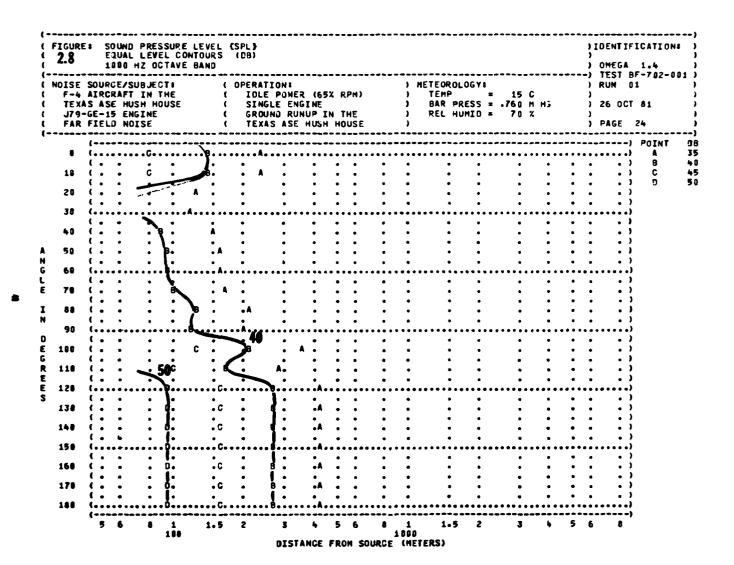


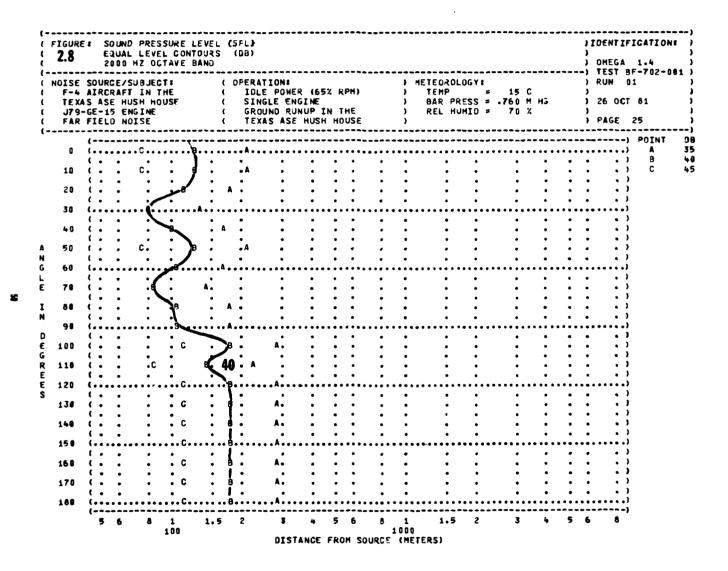


2.8 NOISE S	12 OURC	E/SU	OCTA SJECT IN TH	E	(0	PERATI IDLE	PONE		 % RPI			HETEOROL TEMP					;)	RUN	3F-702-00)1
TEXAS J79-0 FAR F	E-15	ENG:	INE		(SINGL GROUN TEXAS	ID RU	NUP I				BAR PE)	PAGE	
0 (•	•)	•••••••••••••••••••••••••••••••••••••••	E E			c		Α	• • • •	•		•	•	•		•	POINT A B C
20 (•		٩	` }····	c: c.	(8				•	:			•	•	.]	E F G
50	•	•	•	E	•	7	c c						•	:	•	•	•	• 1	• •
60 (70 (80 (•	•)	E.	E E			: :/) 840	Α		•	•	•••••	•	••••	•)
90 (180 (, 60	. E	5(: _€		c		٠.٨.				···:	•			. i	
11 0 (•	•			: : :	E E		: 	.c.			•	:			•••		.] .] 	
139 (148 (•	.G	•	I	. E			c c		A	•	•	•	•	•	:	• 1	 - -
150		•	.G	•	j I	E		} } :	·C···	8	Α	•	•	•	:	••••	:		
178 (188 (•	•	.G	•	F 	. E		P :	.c	.B.	A	•	•	•	•	•	:	, , , , , , , , , , , , , , , , , , , ,	

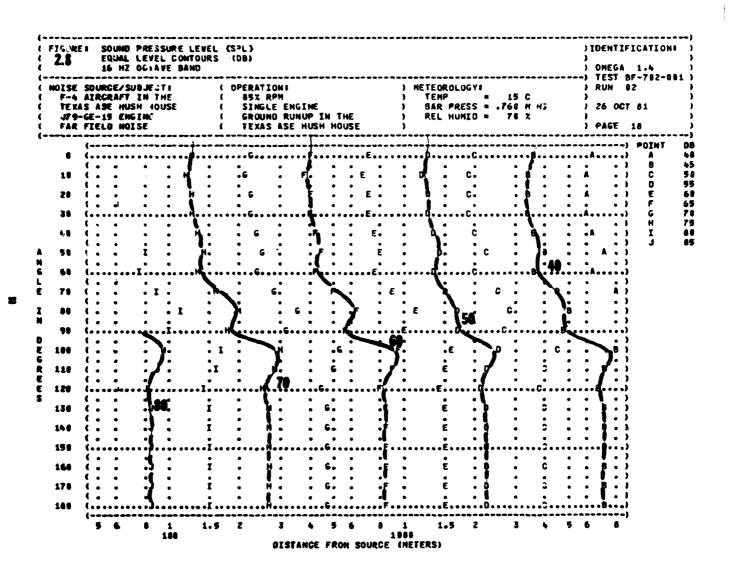
F-4 / TEXAS J79-0	EQUAL	LEVEL IZ OCTI SUBJECT IN TH ISH HOL IGINE	ŧΕ	URS	(D3) OPERAT: IDLE SING	POHER LE ENG: ND RUN	INE UP IN	THE) H	ETEOROLO TEMP BAR PRE REL HUM	= 22	15 C .760 M 70 %	HS))))	OMEGA TEST RUN	22
10 (20 (• • • • •	c)			•••••	•		••••	•	•			-) POINT -) A) B) C) D) E
50 60		ڒ	: c				•	• •	•	:	•	•	•	•))))
70 80 90 90 100 100 100 100 100 100 100 100			نه ن				.A		•	•	•	•		•))))
110 126 130		•	E	50°	c) b	} }		:		:		•	•			, , ,, ,
140 150 160		•	Ē	0-0-0		•	6. 	.A	•	•	•	•		•)) .))
188	5 6	8	E 1 100	1.5	s •••••c	3	B	·A · · · · · · · · · · · · · · · · · ·		1.000	1.5	2	3	•	5 () .) -)

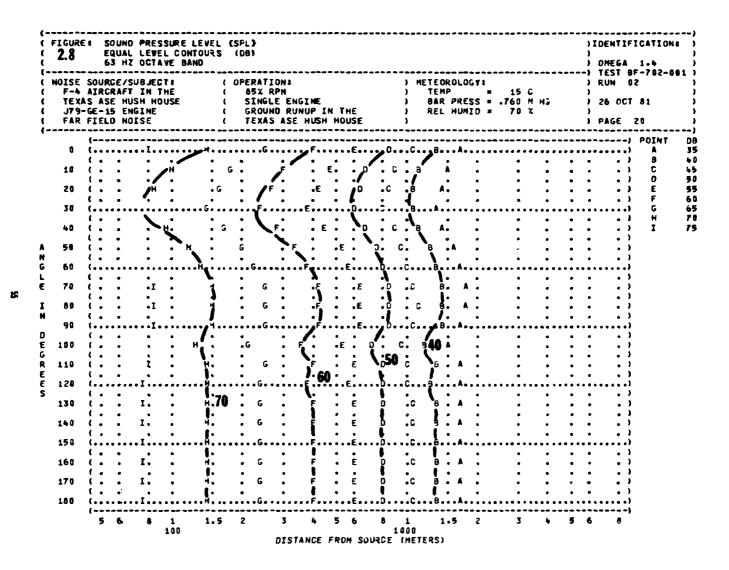


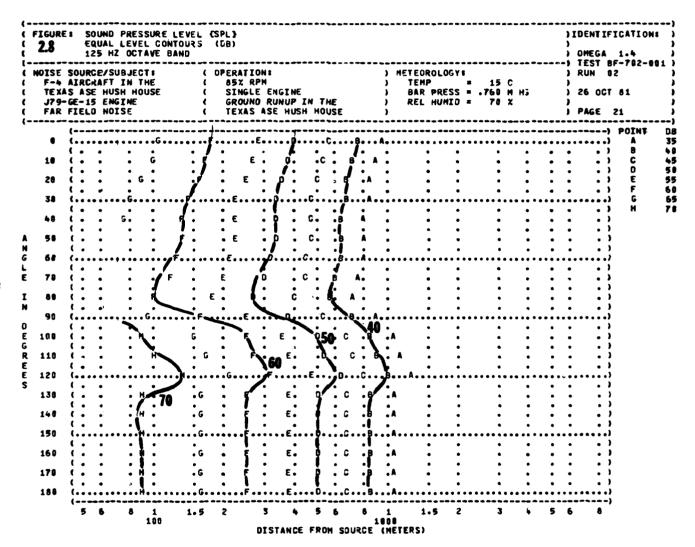




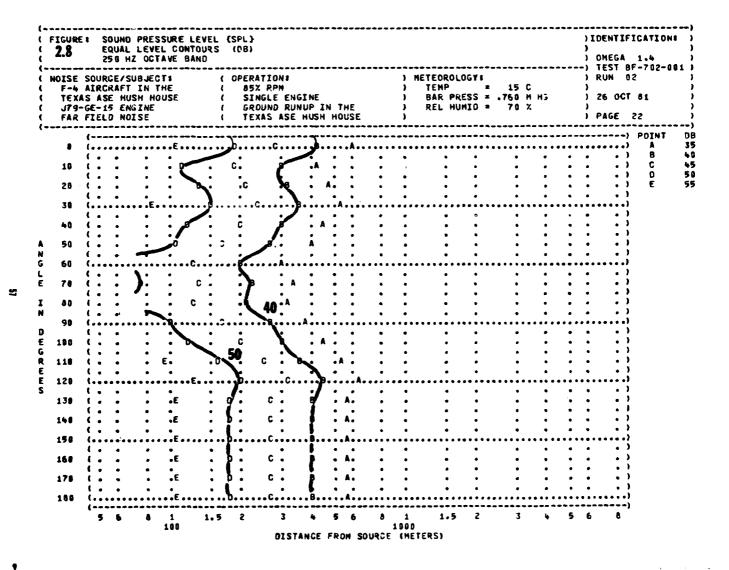
×

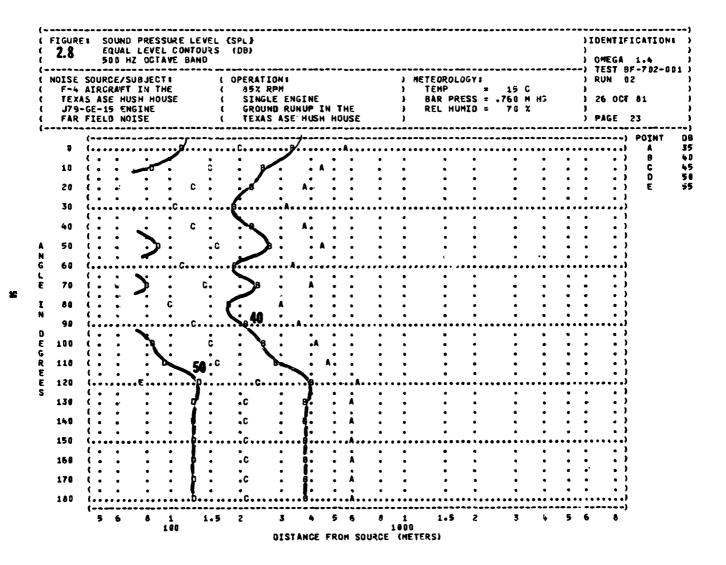


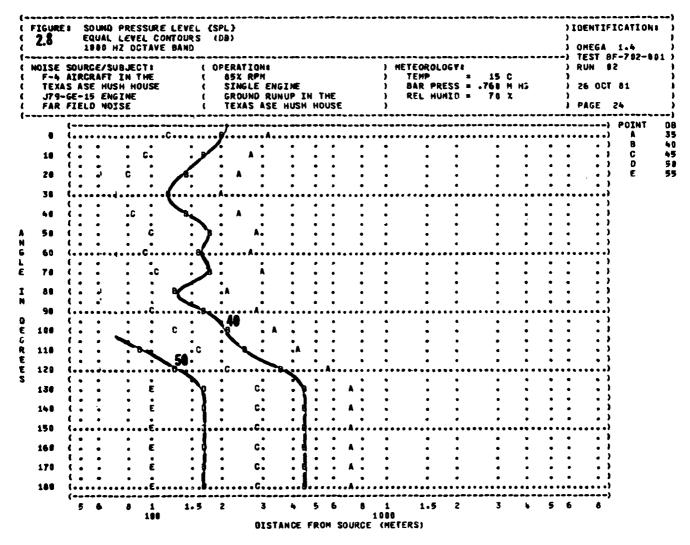




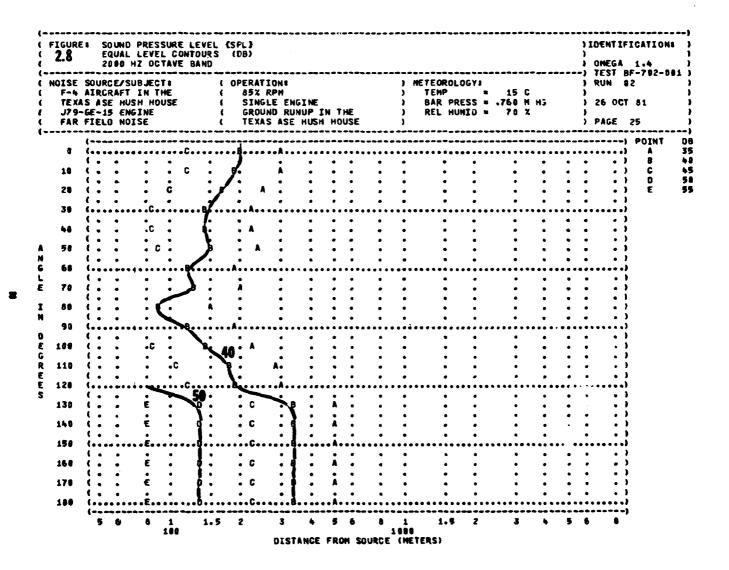
×

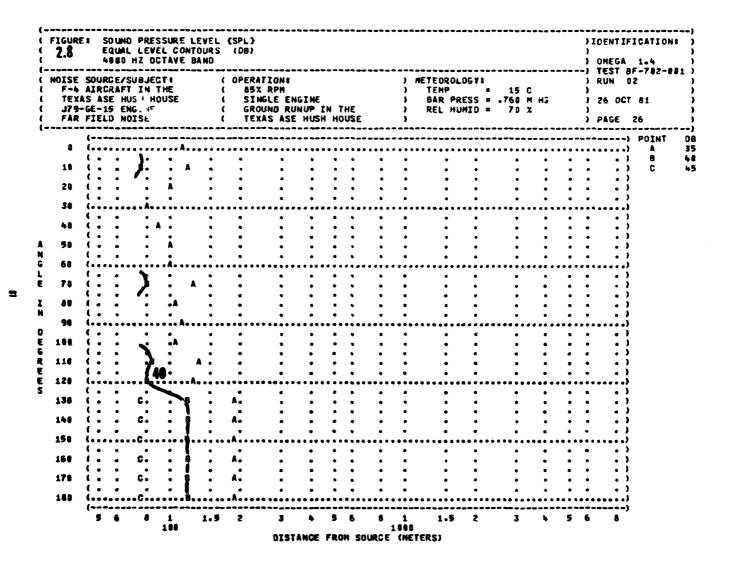




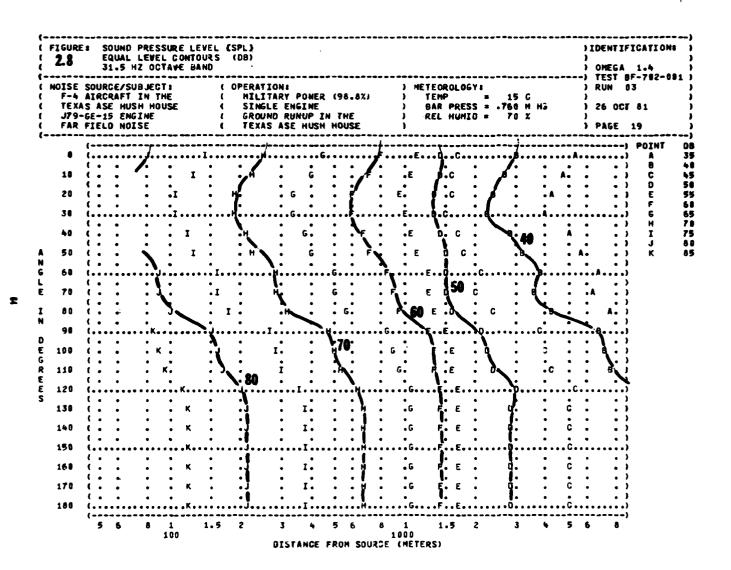


£

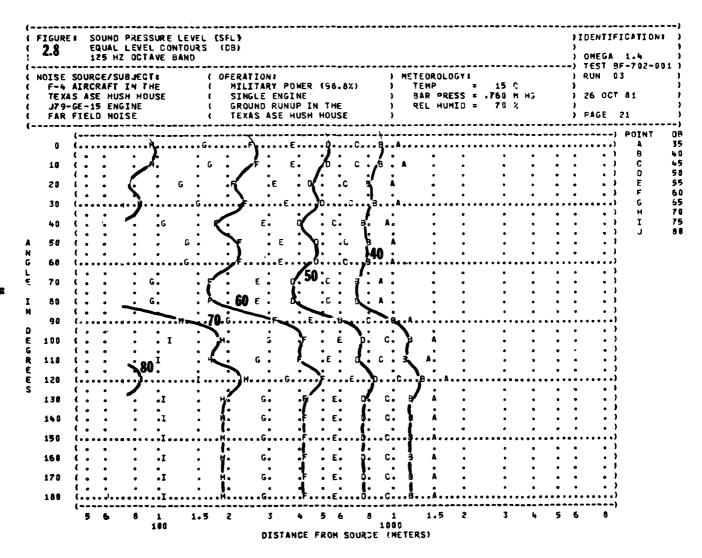


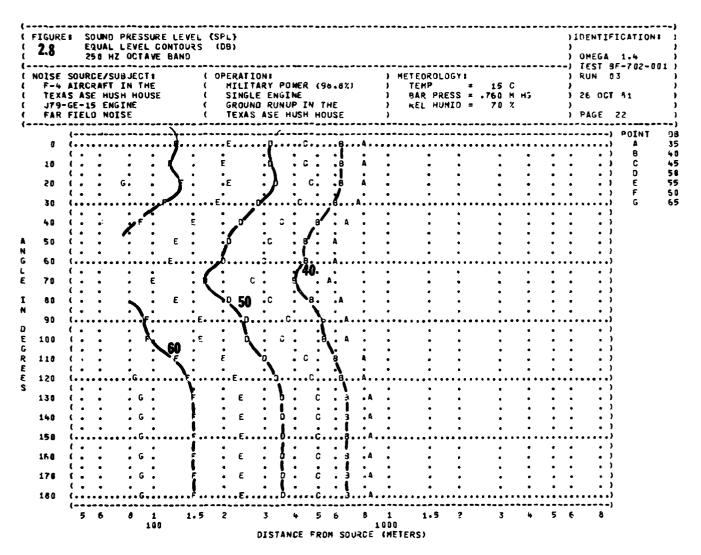


2.8	EQ	UAL L	EVEL	CONTO	URS ((BB)												1	ONEG	IFICATION: A 1.4 BF-702-01	
	SOURCE AIRCE AS ASE -GE-15					OPERATIO 85% RP SINGLE GROUND TEXAS		NE JP IN	TH	E) HETE) TE) B/	OROLOG HP IR PRES	SS =	15 .760 70	С М Н3 %	;	1		CT 61	
FAR	FIELD	NOIS	SE 			TEXAS	45E 1	IUSH	HOU	2E) 							PAGE		_
Œ	(A	•••••	•••••		••••	••••				 •••••		•		••••	• • • •		•••••	-) POINT .) A	
18	<i>(</i> :	:		:	•	:	:	:	•	:	:	•	•	:	•	•		•		į	
29	:	:	•	•	•	•	•		•	•	•	• • ,	•	•	•			•	•	,	
30	(.		•	•	•	•	•	•	•	•	•	•		•				•		•}	
48		•		•	•	•	•	•	•	•		•	•	•	•	•	•	•		J 3	
		• '	•	:	:	•	•	:	:	:	•	•	•	•	;			•	:	į	
50	(.	:	. A	•	•	•	•	•	•	•		•	:	:	•			•	•)	
60		••••		•••••	••••	• • • • • • •	••••	••••	•••	••••	••••	•••••	•••••	• • • • •	••••	••••	• • • •	•••		•)	
78		:			:	•	•	•		•	•	•	•	•	•	•	•	•)	
80		•	•	À	•	•	•	•	•	•	:	•	•	:	•		•	•	•	•	
98	(•	•	•		•	•	•	•	•	•	•	• •••••	•	•	•	• • • •		• • •	•	•)	
190		•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•)	
		•	• .	:	:	:	:	:	:	:	:	•	:	:			•	•		į	
116	(.	•	.A	•	•	•	•	•	•	:	•	•	•	:	•		•	•	• •	;	
120	(••••	. A	••••••	•••••	•••••	••••	••••	•••	••••	••••	•••••	•	• • • • •	•••••	••••	• • • •	• • •		•)	
138	; :	:	:	Ā	•	•	•	•	•	•	•	•	•	•	•	•	•	•)	
140	::	•	:	Ä	•	•	•	•	:	:	:	•	•	:	•		•	•	:	į	
150	(•	•	A	•	•	•	•		•	•	•	•	•	•	••••		•	•	.)	
160		•	•	:	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•)	
		:	:	•	:	:	:	:	:	:	•	•	:	•	•		•	•	•	<u> </u>	
170	(.	•	•		•	•	•	:	:	•	:	•	•	•	•		•	•	•	•	
188	10000	****	• • • • •	A	••••	•••••	••••	• • • • •	• • •	••••	• • • •	•••••								.) -)	
	5	6	8	1	1.5	2	3	4	5	6	8	1	1.5	2	3		•	5 (6 8	•	

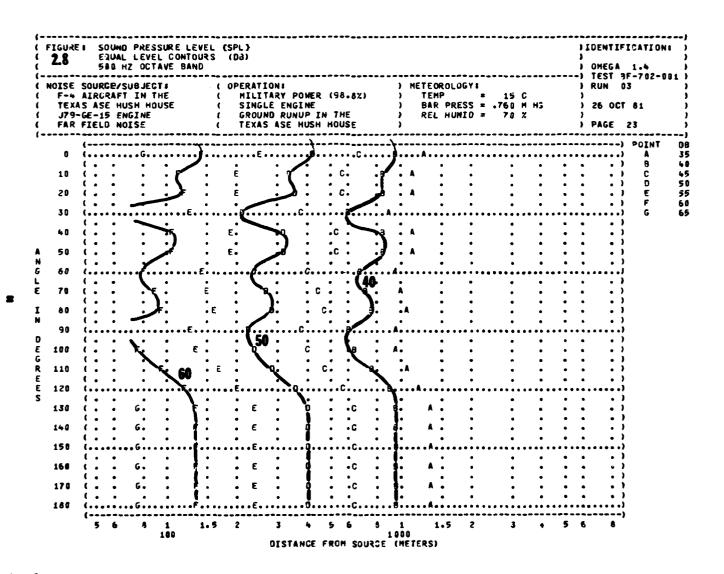


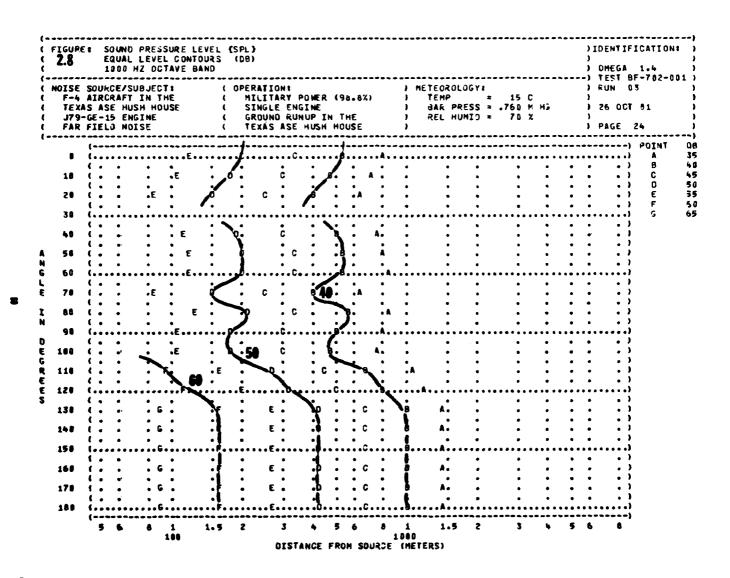
F-4 /	ATRORAFT IN THE (HILITARY POWER (96.8%)) S ASE HUSH HOUSE (SINGLE ENGINE)													METE:	HΡ				15 () TE) RU	ST E	_	-01						
J79-0	€-1	5 E	NGI	NE	1051	E		(G	SINGLE ENGINE GROUND RUNUP IN THE TEXAS ASE HUSH HOUSE)					, , , , , , , , , , , , , , , , , , , ,) 26 OCT 81)) PAGE 20							
0	(• • •				.1.			, ,			G			<i>‡</i>		Ε.		}	.c.		• • • •	A		• • • •				••••)	POINT	7
10		:		•	1.			H	:		G	•	,	*	:	. ε		6	:	C	ş.	A	:		:	:		:	•	. 1	C	
50		:		:	•		1	•	:	G		•	i :		. 1			i"	Ċ	8	•	A			•	•		•	•	. 1	E F	
30	((.	• • •	•••	:	•••	• • • •	. Н	\	• • •	G	••	• • • •	*	\	•••	•	•••	.	с.	····•	• •	٠	•••	••••	• • • •	• • •	•••	•••	••••	• • • •) G	
40	· ·	:		•	·			, H) :			5 :	•	5	ŀ	. ε		·	:	•	, ,	4	•		:	:		:	•	• ;	ı	
50 60	· ·	:		•	•	1 . 7		, ,	Ţ				•		Į.	•	F): 		1		•		•	•		•	• •) 1	
70		:	•••	. 1		• • •	•••		•	•••	G	•	:	7	•	E		7	:	C	Į	IO _A	•	••••	:	:	•••		•	• 1))	
80		:		•	:	ı			Me				•		×	•	Ε .	: \	5	0 c	7		Å		•	•		•	•	•)		
90	(. (•)	•	•	• • • •	1	· · • • •	•••)	•••	•	••6		::	50		E	.))c	٠.,	b	•	. A	••••	•		•••	•		!	
100		:	•	•	•	:	I	•		(70	}	. (;		K	:	E	• •	k	C	1		À		:	:		•	•	. ;	J B	
110		:	1	-20	:		I	•	:	Y		•	G.		: 1	.	Ē	Ē.	Ò	С	7.	1	: 1	١.	•	•		•	•	• 1))	
120	(·	• • •	••{	•	•	• • •	I	• • • •	•:•	7	•••	••••	.G.		•]	 -	.E	• • • • •	9.		::{	•••		••••	•	•••	•••	•	• • • •)	,)	
130	(.	•		:	•		I ,	•	:	Ï		•	6.		• [ŀ	9	•	Ž	C	-(į		•	•	•		•	•	•)	; }	
150	(. (.	•		:	•		.I.	, , , , , , -	:	Ï.		•	 			•		• E • • •	Ĭ.	·		Í	: .		:	•		•	• •		<u>.</u>	
166	(.	•	- • •		•		 I	· · · · ·	•	ļ ļ	. • •	•	G	,				E		C	•]		۱	•	•		•	•	• 1))	
170	(.	:		•	•		I		:	H		•	G.	,	. [. -	i	• E	Ó	C] }	: ,	١	:	:		•	•	• 1))	
180	(. (•	•••	•	•	• • •	. I .	•	•	H.,	•••	• • • • •	. G .	• • •	!	·	••	E	.D.	C		.	•	١	•	•	• • •	•	•		, ,	
	5	6		8	1 10		1	. <u>-</u>	2			3	4	,	5	6		8	1		1.5	5	z		3	•		5	6	8	'	

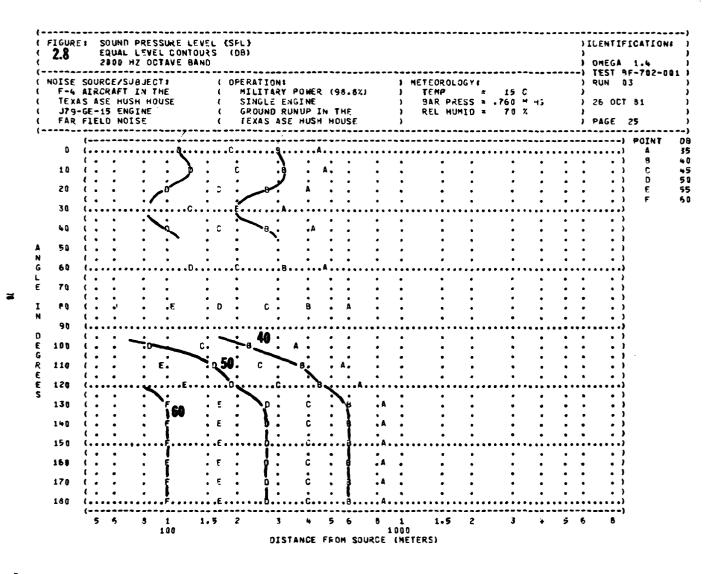




.







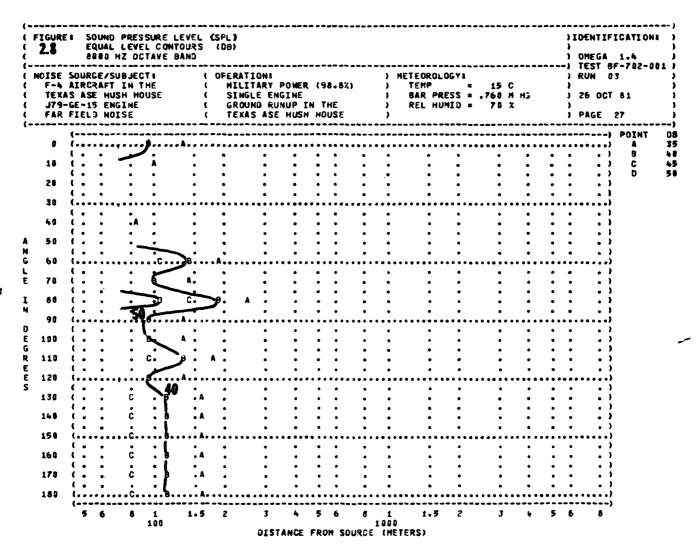
2.8	E0	UAL L	EVEL	URE LEV CONTOU AVE BAL	13 S 10	(CB)						*						: : :	IDENT:) O OMEG!) TEST	1.4 9F-70	,
		E/SUE				OPERATI MILI		AUEB		947) METE		Y 1		_			RUN	03	
		HUS		SE SE	ť	SING	E ENG	INE	130	•04)			PRES				;		, 26 01	CF 81	
		ENG!			(GROUN TEXAS	O RUN			SE			. HUHI	D =	70	%			PAGE	26	
0	(••••																	• • • • • •	-) POI	1
10		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		• •	•) 8	
-	::	•	:	•	•	•	:	:	:	•	:	•		•	:	:		:	•	j ö)
20	(.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•) E	
36			•	- •• <i>•••</i>	· · · · •	•••••	•••••	• • • •		••••	•	.	•••••	- • • • • •	••••	:	• • •	••••	•••••	.;	
40	(.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	• •)	
• •	i :	:	:	•	:	:	•		•	:	:	•	•	•	:	:			:	į	
50	(•	:	•	•	: -	•	•	•	•	•	•	•	•	•	•	•		•	•)	
60	į	···•) _{**} .	c.		b /		• • • •	• • • •		••••	•••••	•••••	••••		••••		•••	•••••	.)	
76		•	7.50	.6	. 4	:	•	•	:		•	•	:	•	•	•)	
	(•		•	_	-			•	•	•	•	•	•	•	•	•			• •)	
80	(.		•	• -	• (•	•	•	:	•	•	•	•	:		•	• •)	
98			-					• • • •	• • • •	••••	• • • •	• • • • • •	• • • • • •	• • • • •	••••	• • • •	• • •	•••	• • • • • •	•)	
		•	•	•	:	•	•	:	:	•	•	•	:	•	•	:		•	•	j	
10		•	•	: c	-	• ,	•	٠	•	•	•	•	•	•	•	•		•		>	
10	::	•	:	•): '	•	:	:	:		•	:	•	•	:		•	•	í	
20		••••		C	••••	•••••	٠٠٠٠	• • • • •	• • • •	• • • • •	• • • •		• • • • •	• • • • •	••••	••••	•••	• • • •	• • • • • • • • • • • • • • • • • • •	,)	
34	<i>:</i> :	:		. c	:	¥	A:	:		:	:	•	•	•	:	:		•	: :	,	
40	(.	•	:	. c	•	1	۸.	•	•	•	•	•	•	•	•	•		•	• •)	
	<i>i</i> :		-1	•	•	Ĭ	•	:	:	•	•	•	•	•	:	:		•	•)	
50	(••••	9	C	• • • •	•••••	A	••••	• • • •	••••	••••		• • • • • •	••••	••••	••••	•••	• • •	•••••	,))	
60	<i>:</i> .	•	.d	. c	•	ļ	A.	:		•	•	•	•	•	•	:		•)	
70	•	•	:	•	•	1	A :	•	•	•	•	•	•	•	•	•		•	• •)	
	<i>i</i> :	•	•	•	•	1		:		•	•	•	•	•	•	:		•	. :	i	
80	(C			A		• • • •		• • • •		• • • • • •	• • • • •			•••	•••	• • • • • •	•) -)	
	5	6	8	1	1.5	2	3		5	6	6	1	1.5	2	3	•	,	5 (6 8		

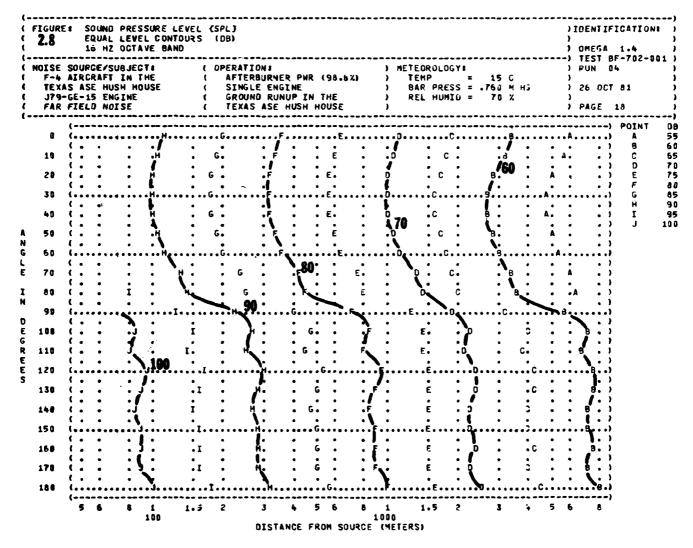
. -- .

.. . .

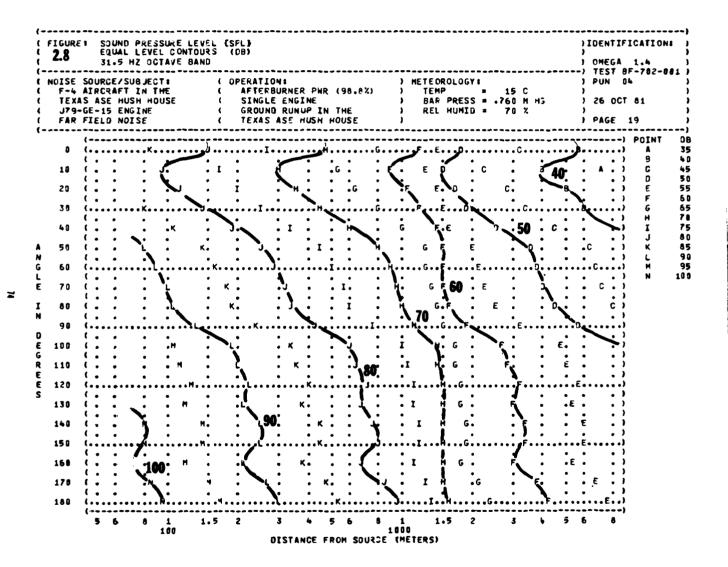
. . .

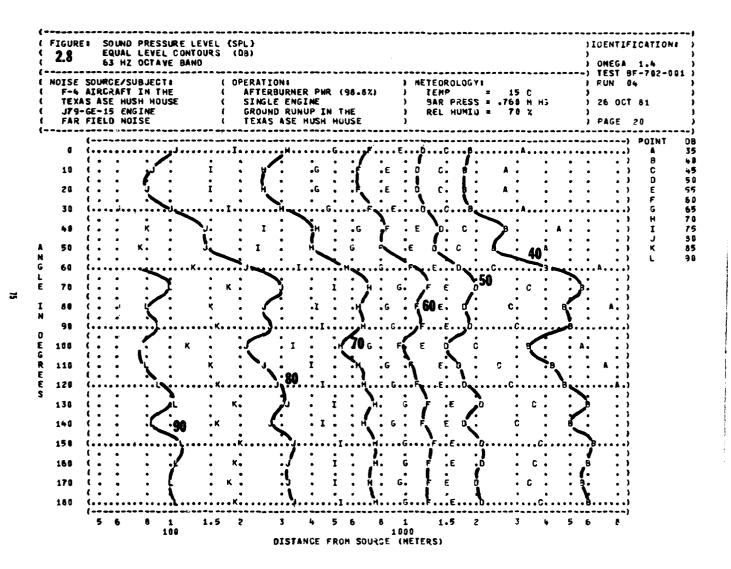
 \simeq

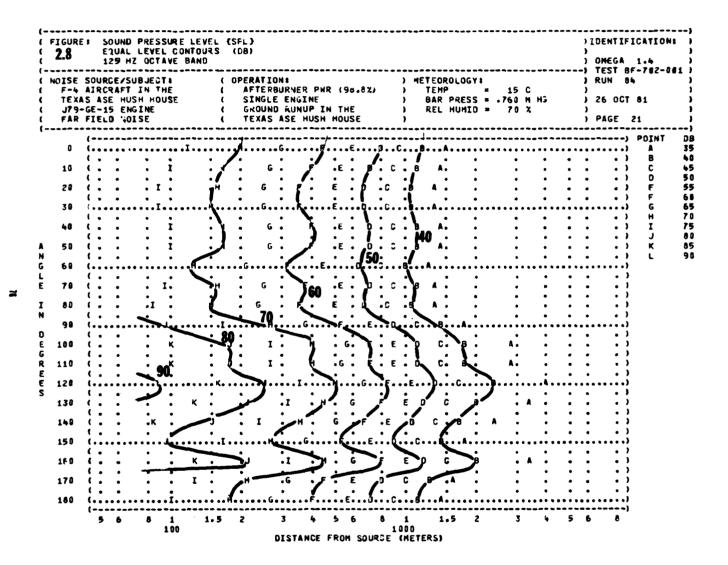


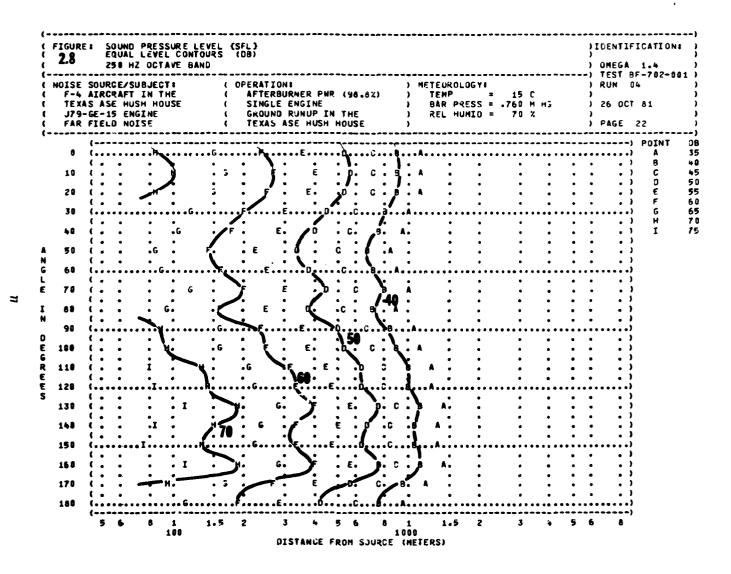


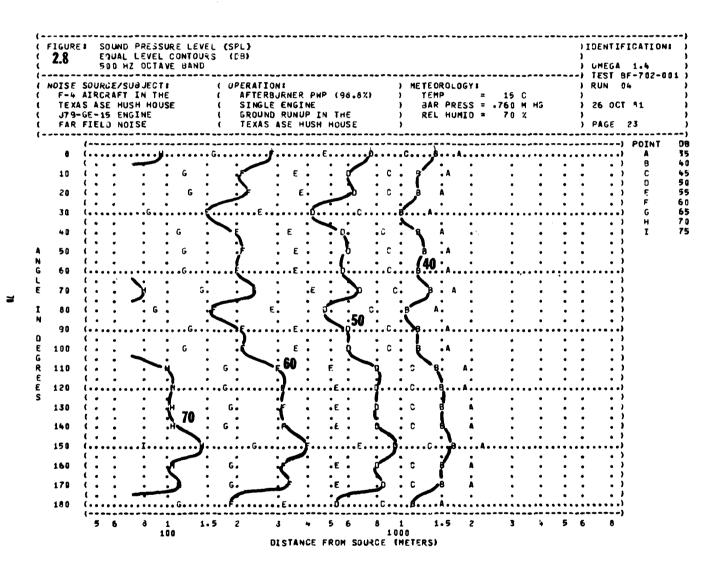
ᆲ

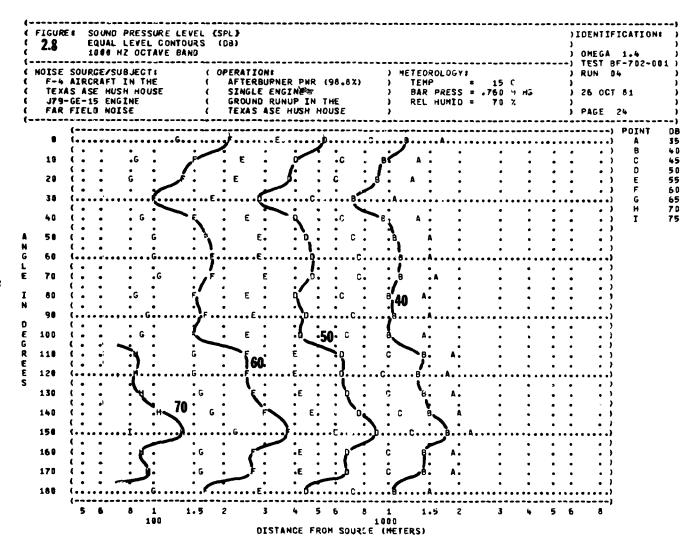




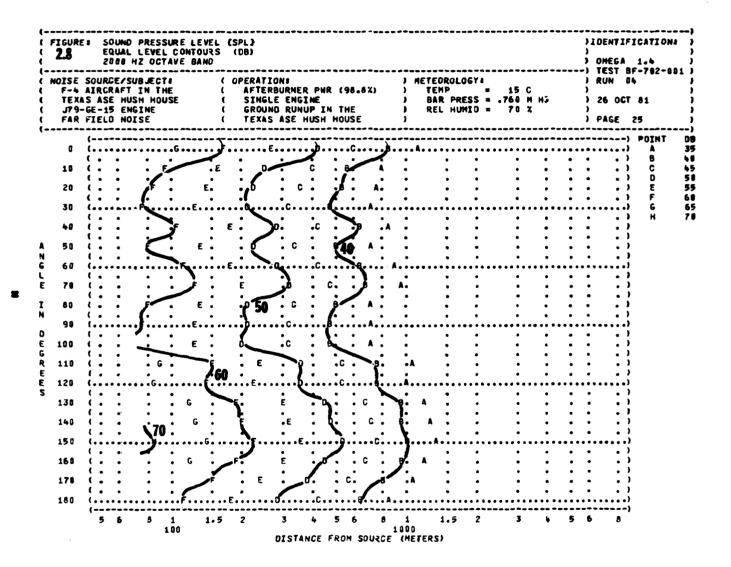


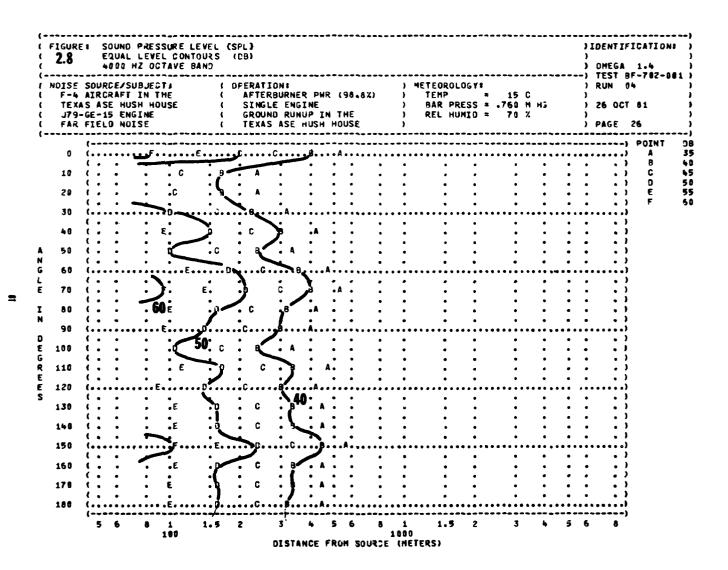






=





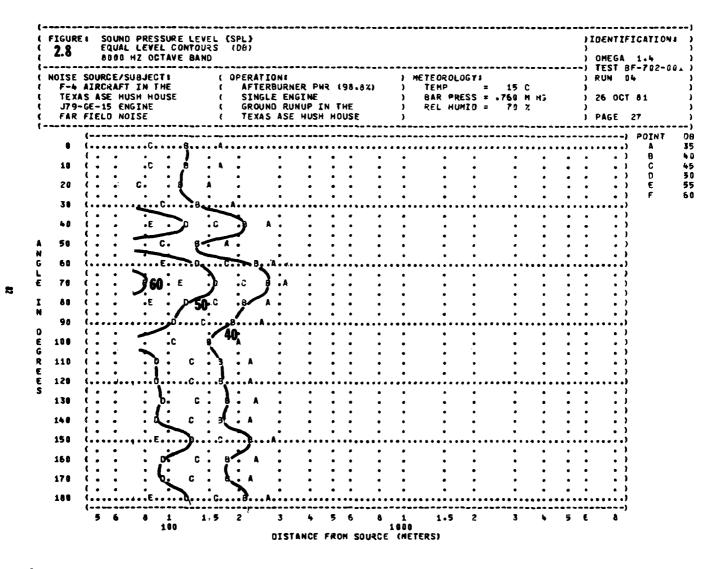


TABLE 3.1

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS F-15 AIRCRAFT IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-704-001

Aircraft Engine Operation	Si	ingle Engine
Idle	68% 1100 420	RPM LBS/HR FF FTIT
80%	80 4600 815	% RPM LBS/HR FF FTIT
Military Power	92% 8700 915	RPM LBS/HR FF FTIT
Afterburner		RPM LBS/HR FF FTIT
Meteorology		
Temperature Bar Pressure Rel Humidity Wind - Speed - Direction	27 .760 78 3 350	•

	TANCE =																OMEGA Test 1	3F-784	6-GQ
NOISE SOURCE					ERATIO						ETEOR	OLOGY				-		1	
F-15 AIPCR				-	IOLE P)	TEMP	PRESS		27 C		,	26 OC1		
F140-PW-18				-	GROUND			THE		ί.		HUMID	•	78 Z	13	,	26 00	01	
FAR FIELD		-			TEXAS		_			;	NEC 1	101120	-			•	PAGE	2	
FREQ									GLE (DECR	FS)							•	
(HZ)	0	10	20	30	48	50	60	70	80	90		110	120	130	140	150	160	170	180
12.5		6b <	70<		64 <	68<	64<	6£<	63<	65<	65<	64<		625	61<	614			
16		63 <	69<	60<		65<	61<	67 <	66<	62<	64<		64<		024	01-			
20		60<	67	57<		64<	61<	63<	66 <	62<	p2<	61<	60<	61<	62<	59<	59<	58<	
25		56 <	66<		56<	61<	60<	61<	63<	59<	60<	584		56<	57 <	59<		57<	
31.5		53<	61<		54<	58<	55<	68<	61 <	59<	58<	56<	55<	55<	60<	57<	57 <		54
40	55<		62<	534	54<	544	57<	58<	60 <	57 <	55<	55<	54<	55<	58<	53<	64<	58<	
50			56<		55 <				57 <							56<			
63															55<				56
80	53<		53<			53<	54<		55 <	56<		55 <			57<	52<	63<	58<	5
100	58<			57<		54<	58<	59<	56<	57<	54<	54 <	60<	54<			57 <	56<	5
125								56<									61<		
160	52<			52<					52<					52<			57 <	52<	
200			49<	_													52<		
250	49<		50<		45 <		44<				45<		48<	47<				44<	
315	47<	46 <	44<	45<					43<	43<		43<		45<			45<		
400													424	41<			43<		
50 C	41< 39<	70.	40<	39<						•••			33<	39<			38 <		
630 800	37<	39 < 37 <	40<	36< 36<		36 <	36<			37<	76.4	36<	33< 43<	39<			39<		
1000	39<	36<	39<	30<		38<	36<	36<	37<	38 < 40 <	36<	40<	43<	44< 45<			41< 39<	38< 38<	
1250	43<	48<	39<	40<		40<	39<	36<	38<	42<	42<	39<	45	43<	34<	33<			
1600	44	42 <	40<	39<		41<	40<	39<	38<	42<	41<	39<	46	45	34<	33.	40<	41<	3
2000	41<	46 <	39<	36 <		36<	36<	35<	36 <	41<	38 <		44	41<	341		60<	36<	
2500	54	49	41	43	66	42	39<	40<	38<	39<	35<	36 <	41	38<			37<	33<	•
3150	51	49	40<	40<	• •	39<	35<	38<	36<	35<	30<	32<	38<	35<		34<	•		
4000	48	47	39<	40<		38<	35<	40<	37 <	31<	- • •	34.	344	3.			34<		
5000	47	43	37<	48	40	37<	34<	41	39	30<			31<	28<		28<	_	30<	
6300	46	44	37	39	40	37	33<	38	37	27 <			25<				29<		
8900	46	43	37	39	37	35 <	34<	38	37	29<		27 <		25<			27 <		
10000	41	39	29<	33<	31 <	25 <	28 <	33<	32<	27 <		25<							
			_										_						
OVERALL	63	69	75	64	68	72	69	72	72	70	70	69	67	68	68	66	69	65	6:1

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

NOISE SOURCE/SUBJECT:	ATION:		ENTIF)										(09)	LEVEL		Ī	BAND	SURED S OCTAVE	3.9 1/3
FREQ	794-00	8F-76 32 81	EST E) i		27 C	= 2 = .76	LOGY I	TEORO TEMP BAR I) HE		THE	PIN	M ENGI RUNU	80% RP SINGLE Ground	(OF 8		TI THE USE	/SUBJECT IN HUSH HO	NOISE SOURCE F-15 AIRCE TEXAS ASE F100-PW-1
12.5										necae	C. E /			~						EDEA
12.5	0 188	170	160	150	140	130	128	110					60	50	40	30	20	10	0	
16																			-	
20		_																		-
25		_							• •											
31.5				-													_		_	
40 60 57 57 57 61 60 62 66 62 59 58 63 63 63 69 69 69 69 60 63 63 63 63 68 69 69 60 58 61 63 63 68 69 60 58 61 61 61 61 63 63 68 67 68 59 60 39 60 59 61 62 59 58 58 58 58 58 59<																	-			
50 59 58 57 56 57 59 61 64 62 60 58 61 63 63 63 68 67 63 61 62 59 61 62 59 58 58 59 59 59 60 59 61 62 59<			_															•		
83							_							• •				•		
80 56 54 55 57 56 58 50 50 50 50 50 59 59 59 59 59 50 50 50 50 59 59 59 50 50 50 59 59 59 50 50 50 57 55 59 59 59 50 50 50 57 56 55 57 59 57 59<																				
100										-										
125	•																	•		
160 52 61 53 53 55 54 56 56 84 55 57 58 200 51 54 51 54 51 55 54 50 49 53 52 57 58 250 49 51 51 48 44 45 48 47 50 47 48 47 52 52 53 50 315 47 49 47 46 46 45 48 44 48	-												2/4	244						
200	•														774	- •	201	20 4		
250	-							745		-	72 4	734	37<		E4 4		E4.		26	
315	-				-			490					1.5 -					21.	4.04	
\$100 \$\frac{43}{43}\$ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	• • • • • • • • • • • • • • • • • • • •							• • •	• • •			40.	475		44.					
500 45 44 43 41 3y 39 39 43 41 45 45 44 40 39 39 39 41 40 40 38 35 36 41 41 45 45 45 41 40 38 39 38 36 41 41 46 43 45 41 40 38 38 36 38 36 42 41 47 43 46 46 42 41 47 43 46 46 42 41 47 43 46 48 41 47 43 46 48 41 47 43 46 42 41 37 36 38 38 36 35 41 48 41 48 41 48 41 48 41 48 41 48 41 41 49 41 49 41 49 41 49 41 49 41 49 41 49 41 49 41 49 <t< td=""><td>•</td><td></td><td></td><td></td><td></td><td></td><td>• •</td><td>43-</td><td>43-</td><td>421</td><td>431</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	•						• •	43-	43-	421	431									
630	-									10-		10.		240						
880											76.		4.0-						_	
1000								76.0										•-		
1250					• •			301			30 1									
1680 46 45 44 45 43 42 41 39 38 39 38 36 42 39 43 40 36 48 39 38 36 42 39 43 40 48 39 200 200 41 42 41 40 37 36 38 38 36 37 35 36 40 38 41 38 42 38 20 30 38 36 37 36 39 36 40 38 36 37 36 38 38 38 36 37 37 36 39 36 40 38 39 36 40 38 39 36 40 36 33 33 36 37 36 39 36 40 30 33 36 33 33 36 36 39 36 39 36 34 30 30 33 30 30 33 30 30 33 30 30 30	• •		. –					154	164		34 €									
2000		39		. –							- •									
2500 46 44 42 41 42 35 37 35 36 32 32 37 36 39 36 40 36 3150 45 42 38 37 39 38 36 36 36 33 33 33 35 35 36 39 36 39 35 36 39 36 39 36 39 36 39 36 39 36 39 37 39 39 39 37 29 39 31 29 31 35 32 37 38 32 38 38 38 39 39 39 37 29 39 33 28 27 27 38 38 38 38 38 39 39 37 29 39 38 38 28 27 27 38 38 38 38 38 39 39 37 29 39 38 28 27 27 38 38 38 38 38 39 39 37 29 39 38 28 27 27 38 38 38 38 38 38 38 38 38 38 38 38 38	•		• •		• •										• -		• • •			
3150 45 42 36 37 36 36 36 33 33 35 36 39 36 39 39 39 39 39 39 39 39 31 32 36 34 37 33 5000 46 45 39 39 40 38 33 42 35 31 35 35 35 35 35 35 35 35 35 35 35 36 38 38 28 30 33 20 27 27 34 32 32 30 8000 41 39 35 35 36 34 28 30 33 29 29 25 25 27 32 31 31 29 10000 36 33 30 28 29 28 25 33 30 25 29 26 26 27 26 26 27 28 26 27 25	_	36		• •														• -		
4800 42 42 37 34 35 34 31 37 34 30 32 38 34 37 33 5000 46 45 39 39 40 38 33 42 35 31 29 31 35 33 35 35 33 35 35 35 35 35 36 32 30 32 30 28 32 30 30 28 32 30 30 28 31 31 29 29 25 25 25 25 25 25 27 32 31 31 29 10000 36 33 30 28 29 28 25 33 30 25 29 26 26 27 25 26 27 28 26 27 25 29 26 28 26 27 25 29 28 28 28 29 28 28 29 28 28 29 28 28 29		35																		
\$000 46 45 39 39 40 36 33 42 39 31 35 33 35 33 6300 43 42 37 39 39 37 29 39 33 28 27 27 34 32 32 30 8000 41 39 35 35 36 34 28 36 33 29 29 25 25 27 32 31 31 29 10000 36 33 30 28 29 28 25 33 30 25 29 24 28 26 27 25		33					•,-													
6308	_	33<		•			29<										- •			
8000 41 39 35< 35< 35 34< 28< 36 35< 29< 29< 25< 25< 27< 32< 31< 31< 29 10000 36 33< 30< 28< 29< 28< 25< 33< 30< 25< 29< 24< 28< 26< 27< 25		304					_,		27 <											
10000 36 33< 30< 28< 29< 28< 25< 33< 30< 25< 29< 24< 28< 26< 27< 25	-	29					25<	25<												
	-	25												- •						
OVERALL 76 75 74 75 74 75 75 79 79 79 80 80 81 81 82 81 82 81	1 83	81										• .							~-	045m414

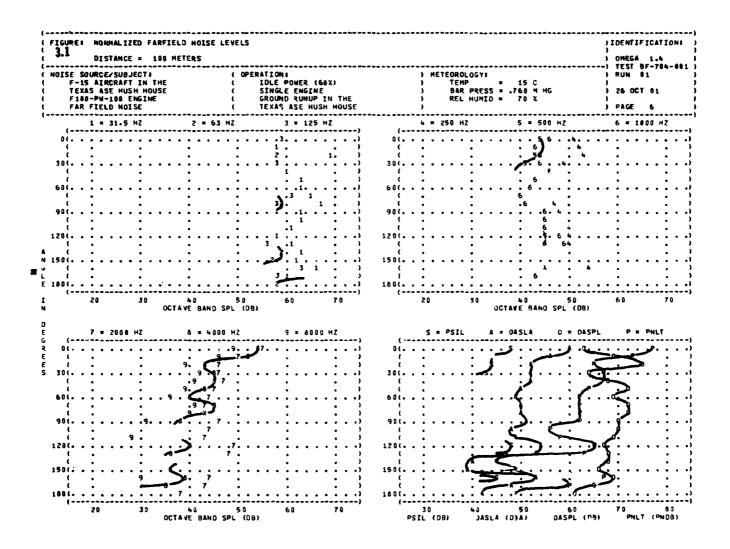
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

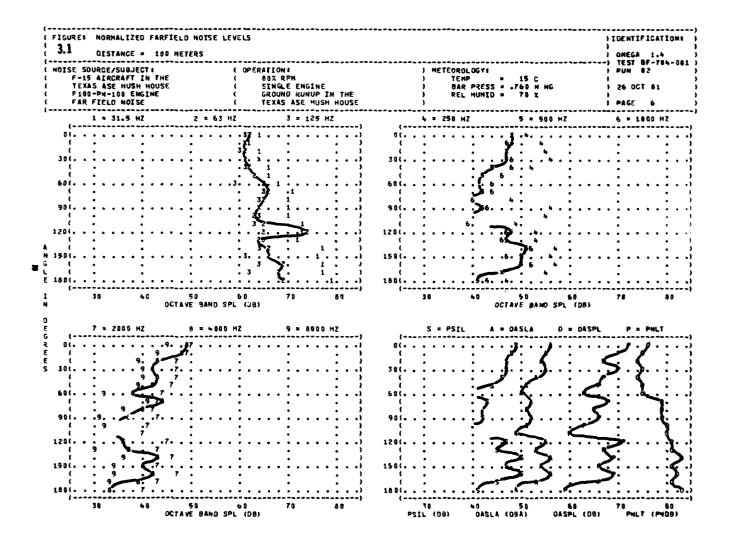
•	TABLE:	MEASUR 1/3 00	TAVE	BAND			LEVEL	(60)			*)		FICAT	
(-	NOISE SOL	IRCE/SU	BJEC	T :		(OF	ERATIO							in Log Y)	EST		4-031
;	F-15 AT					-	HILITA Single			45%)		,	TEMP	PRESS		27 C	٠.	,	26 DC	* 0.4	
ì	F100~P						GROUND		–	THE		΄.		HUMID		78 %	n.,	, , ·	בה טנ	1 27	
ì	FAR FIE			-		-	TEXAS					í	\L	110/12/5	_	, ,		•	PAGE	2	
(-																					:
(FREQ		_						_			COEGRE									
•	(HZ)		ð	10	20	30	40	50	60	70	80	30	160	110	120	130	1+0	150	160	170	180
ì	12.5		85	92	83	83	83	61	82	66	35	dь	65	85	87	45	31	8 5	83	84	85
ì	16	,	34	84	84	83	82	83	b 4	85	3.8	47	87	85	βż	37	80	67	96	96	86
i	20		73	78	80	80	82	86	84	86	85	35	3 4	37	63	86	7.0	46	85	5.5	88
ĺ	25		74	72	74	75	77	78	81	83	31	82	36	86	øó	d6	65	65	36	87	83
(31.5	5	72	70	71	73	7+	74	7+	77	75	77	79	82	82	92	£2	34	82	85	84
(4 0		73	71	73	73	75	73	75	76	71	72	74	75	d 0	77	79	95	83	81	84
(50		68	67	63	68	70	71	71	73	72	71	71	71	73	74	78	79	79	78	60
(63		04<	64 <	64<	٥7	ô6	65<	67	69	60	59	66	71	71	68	٤Z	72	73	72	72
(8 0		65	63<	64	64	67	65	66	66	67	67	60	υÿ	òβ	67	66	66	67	58	67
(100		67	65	65	63<	67	65	64<	65	66	66	L 6	70	71	73	68	ė6	66	56	68 1
(125		68	64 <	63<	62<	63<	63<	61<	63<	63<	664	£ 7	>0<	63	65<		> 3c	€7	54<	
(160		63	61 <	61<	61<	61 <	53<	57<	56<	68<	63	64	63	62	62<		65	67	63	58<
•	200		61	61	60<	56<	58<	57<	55<	56<	204	60<	62	61	66	63	64	64	66	66	F9< 1
٠	25 0		58	60	59	56	55	53<	55	55	57	50	61	64	67	65	05	56	65	66	59
:	315		60	59	62	56	50 <	48<	51<	50<	53	55	57	61	61	59	60	64	64	51	F2<)
:	400 500		60	59	61 65	56 62	55 64	53 63	50< 59	54 63	56 59	50<	54	59 54	5 1	57 56	57 55	01	64	57 58	50 < 1 48 < 1
;	630		55 6+	55 54	63	62	63	63	58	59 53	58	53	50 53	55		53	5 4	00 60	66 63	39 39	49
ì	800		61	59	60	59	60	60	59	57	57	54	55	55	57	54	5 G	51	62	60	50
;	1000		62	60	59	58	61	6.0	55	55	53 53	51	52	53	55	52	53	57	60	51	49
ï	1250		64	63	62	60	61	61	57	56	žš	51	53	55	57	52	53	27	57	60	50
i	1600		62	61	66	56	59	58	50	52	53	49	52	53	55	51	52	54	59	59	47
ì	2000		57	58	57	55	54	53	52	50	51	48	51	51	52	46	49	50	5.5	59	45
i	2500		53	53	52	51	52	50	48	45	+5	44	46	47	40	43	46	48	51	53	43
i	3150		52	52	47	47	46	47	46	44	44	42	44	44	45	44	46	47	54	51	43
Ĺ	4000		48	49	44	44	44	45	43	43	44	41	42	41	42	414	44	44	45	47	40<
(5000		48	47	44	44	43	44	43	42	43	41	41	40	43	41	43	43	46	45	48 1
(6300		48	48	45	43	43	43	41	41	42	39	39	38	40	39	41	41		42	38)
(8080		47	48	44	43	42	41	41	42	43	41	40	39	40	39	41	+1	41	40	37 2
(10000		44	45	40	39	38	38	38	39	4 0	37	36	35	36	36	38	37	37	37	34<)
(OVERALL		89	87	6.6	88	88	90	69	91	92	92	93	93	94	93	92	93	92	34	62 1

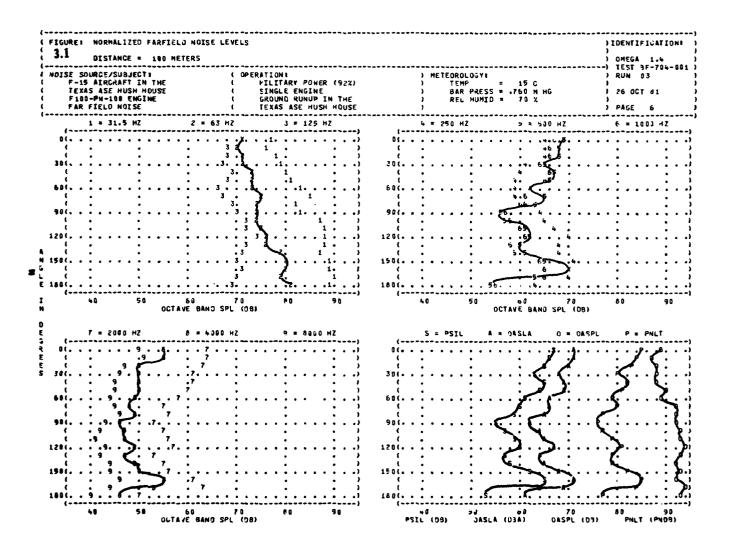
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NUISE.

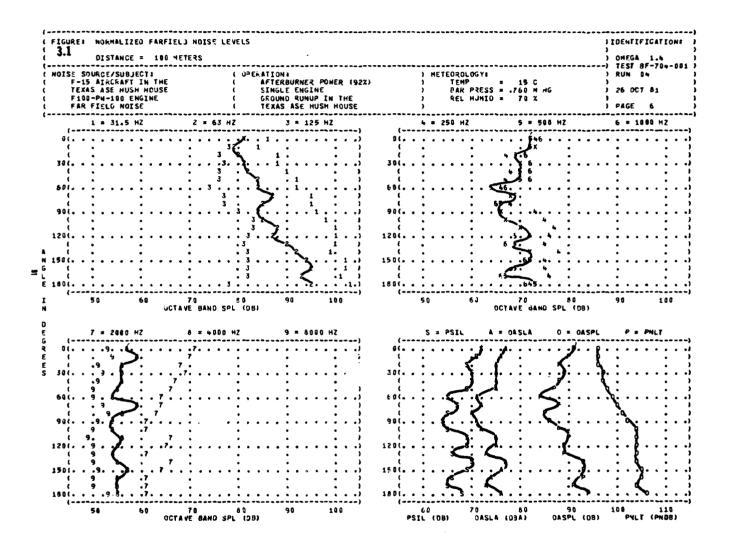
 2	MEASUR! 1/3 OC: DISTANO	TA	BANE)		LEVEL	(03)								,)	DENT I	1.4	_
 ISE SOU					-	FERATI		2.004	50 40				OLOGY				,		04	4-001
F-15 AII Texas a					(AFTER SINGL			EK (Y	27,1	,	TEMP	PRESS		27 C		,	26 00		
16 AAS A. F 100-PW					;	GROUN		-	THE		í		HUHID		78 %	rt y	•	28 00	1 21	
FAR FIE			·		,	TEXAS			_		;	~EL	non13	· •			•	PAGE	2	
 FREQ								- 34	Α:	NGLE	(DEGR	EES)						,		
(HZ)		٥	10	20	30	43	50	60	70	ė ū	90	100	110	120	130	140	150	160	170	180
12.5	ç	32	92	i	91	92	92	92	92	93	95	35	97	95	96	93	36	96	95	96
16	(3 3	90	90	90	91	91	93	93	35	95	97	98	96	97	98	14	95	96	96
20	3	90	89	90	91	92	92	94	93	37	96	99	97	99	97	97	96	98	98	99
25		83	61	85	85	88	90	90	93	93	94	96	98	93	30	95	98	97	98	99
31.5		83	77	76	81	84	36	86	48	30	91	92	94	95	93	93	97	97	96	97
40	7	73	78	79	81	82	33	ڌ ع	86	95	05	69	91	91	92	45	97	47	93	97
50	1	78	77.	78	78	86	82	5.8	85	82	30	8 2	96	45	39	91	93	94	91	94
63	1	75	74	72	76	76	76	79	Ü	80	79	79	81	73	83	85	46	8.8	86	89
8 0	7	75	72	72	75	74	74	74	78	78	79	80	80	73	79	78	81	61	81	79
100		77	75	74	74	73	73	73	74	14	77	61	81	73	79	79	79	78	78	75
125		76	74	71	72	72	71	68	71	72	75	77	76	77	74	77	7£	77	78	73
15 B	i	72	69	97	67	65	ひゔ	64	67	ó Ŧ	72	73	72	72	72	74	15	75	74	71
500		o đ	69	63	65	65	65	62	64	64	69	71	72	72	71	73	70	71	73	69
2 5 0		50	59	62	65	64	62	62	54	o 3	69	71	73	72	71	76	72	72	71	66
315		5-3	67	52	65	60	56	57	61	00	65	65	69	63	67	70	59	68	67	67
408		57	6č	6 4	64	61	59	56	62	53	61	63	67	68	65	67	65	64	53	66
500		7 ن	67	54	66	55	66	60	65	60	60	61	63	63	65	60	68	64	62	69
630		67	66	64	65	66	67	60	64	95	62	63	64	65	63	67	66	62	ρS	69
360		57	65	64	65		65	63	64	61	62	64	65	63	63	67	69	64	61	69
1000		57	55	64	65		65	60	62	60	60	60	64	64	61	66	54	62	61	64
1250		71	71	69	69		55	63	63	60	61	60	66	6+	60	68	65	62	61	64
1600		53	68	6 E	66		65	62	61	5.0	58	58	64	62	58	65	61	56	50	58 55
2000		5+	34	63	63		59	58	59	35	56	56	61	ėβ	55	59	59	£6	55	52
2500		57	5ô	57	59		50	52	53	52	51	52	56	55	52	54	55	53	52	
3150		54	55	52	53		52	50	57	51	50	50	53	52	51	52	53	51	51	51 50
4000		51	53	49	50		50	48	50	51	49	49	50	50	49	50	51	49	+9	50 50
5000		51	52	50	50		49	49	51	1ز	49	+8	49	43	48 47	49 47	50	49 47	49 48	5 U
6300		51	51	49	50		40 47	47	49	50	48	47 47	•	47 47	41 46	47	+9	47	47	48
8000		٥ خ	50	47	46	47		46	49	30	48 45		46 44	47	46	44	48	46	+5	40 46
10000	•	4 5	47	44	44	43	43	44	47	+7	49	44	44	47		44	46	47	47	70
OVERALL	•	96	96	96	97	97	38	44	100	101	102	103	104	104	104	104	105	105	104	106

LEVEL CORRECTED TO REMOVE PACKGROUND/ELECTRONIC NOISE.

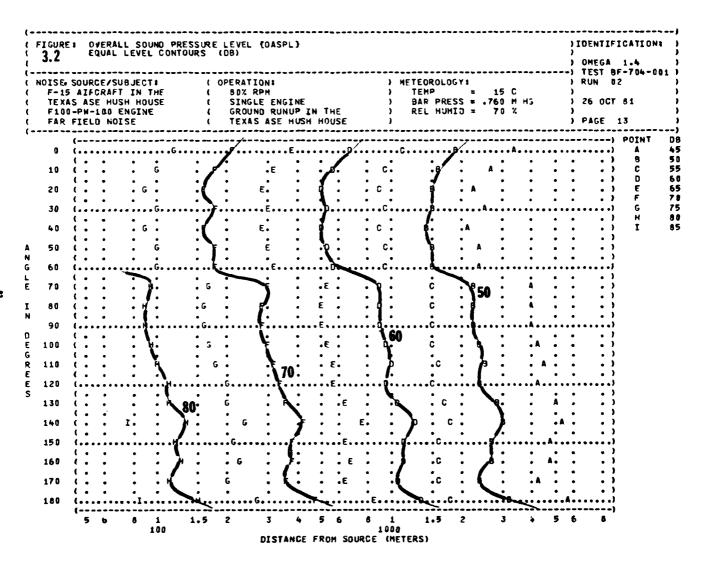




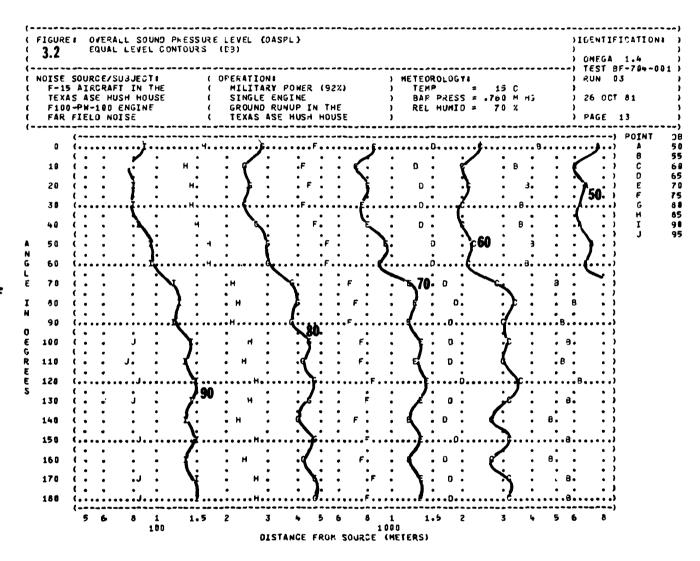


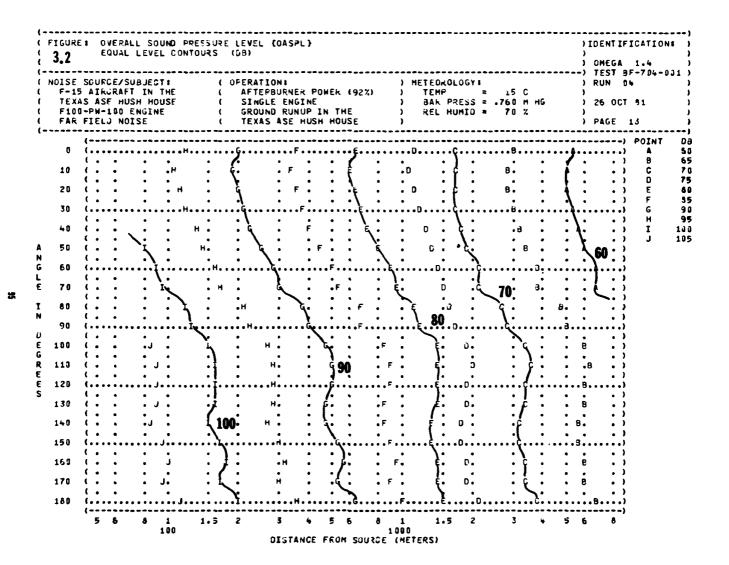


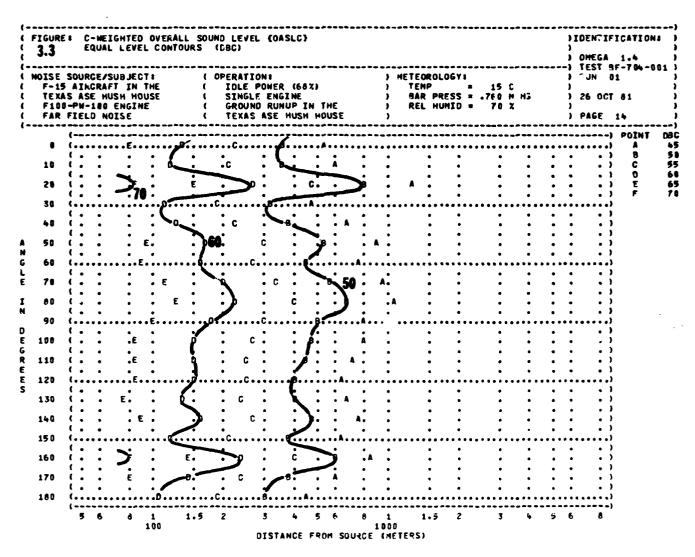
AIR FORCE AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATT-FETC F/G 20/1 AD-A118 773 USAF BIOENVIRONMENTAL NOISE DATA MANDROOK. VOLUME 172. MUSH-HOU--ETC(U)
JUL 82 R A LEE, T H RAU, C JONES
AMRL-TR-75-50-VOL-172 UNCLASSIFIED 20.9 116 77 5



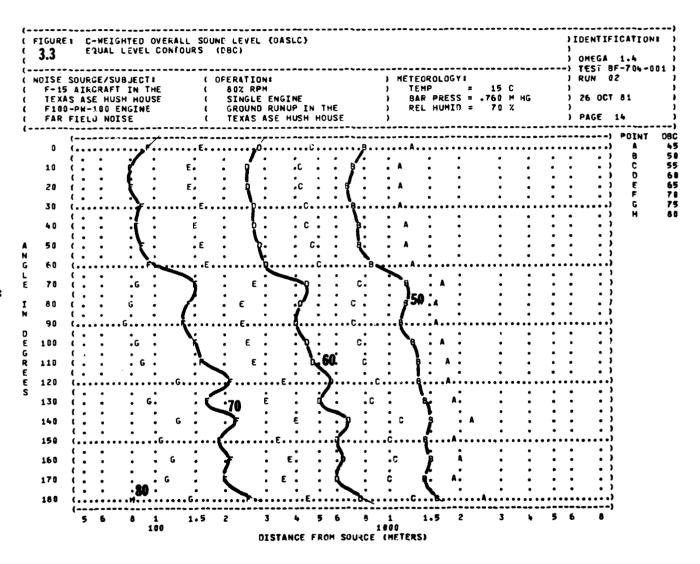
Z



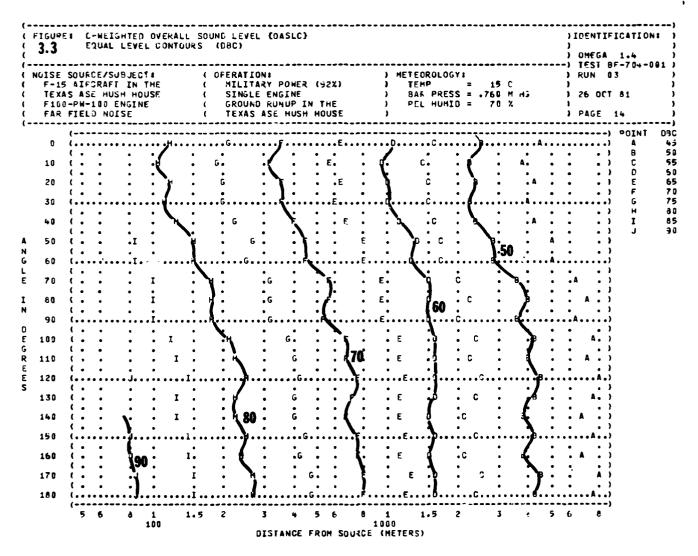




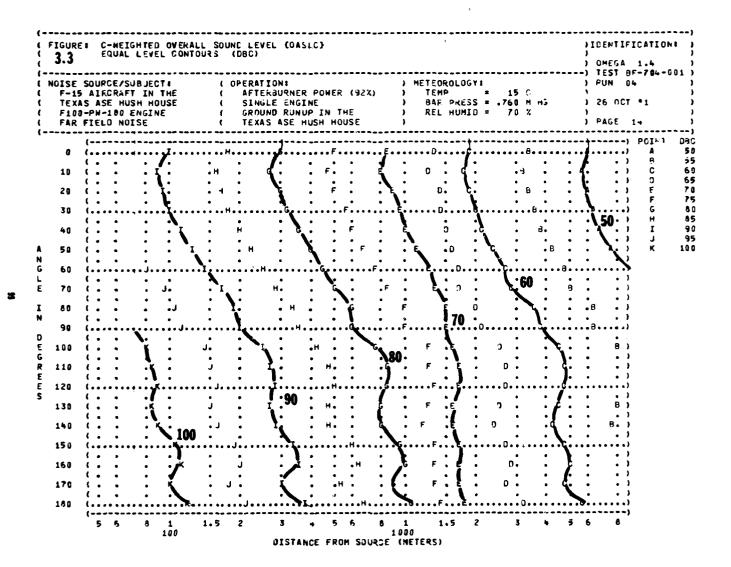
×

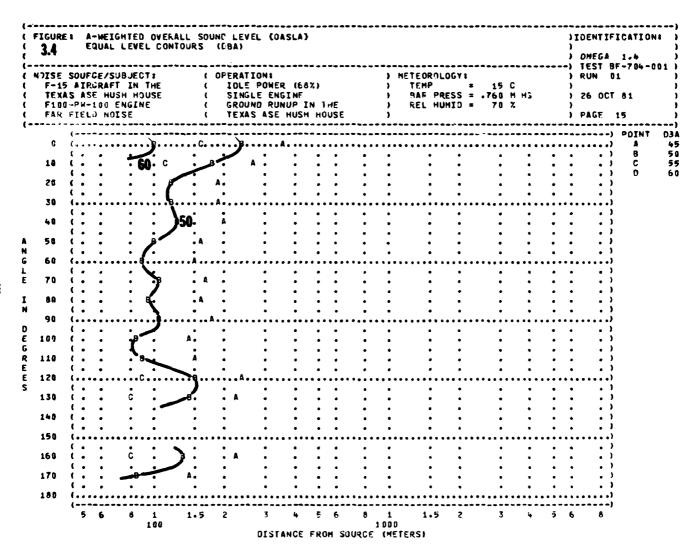


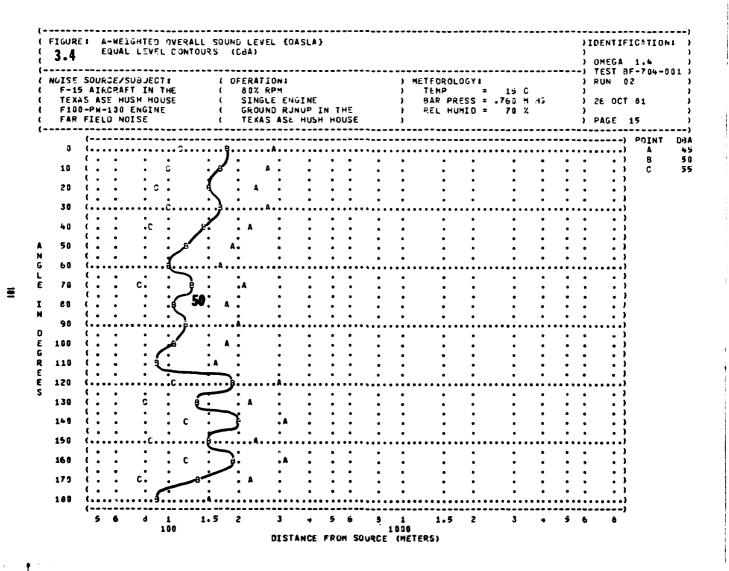
=

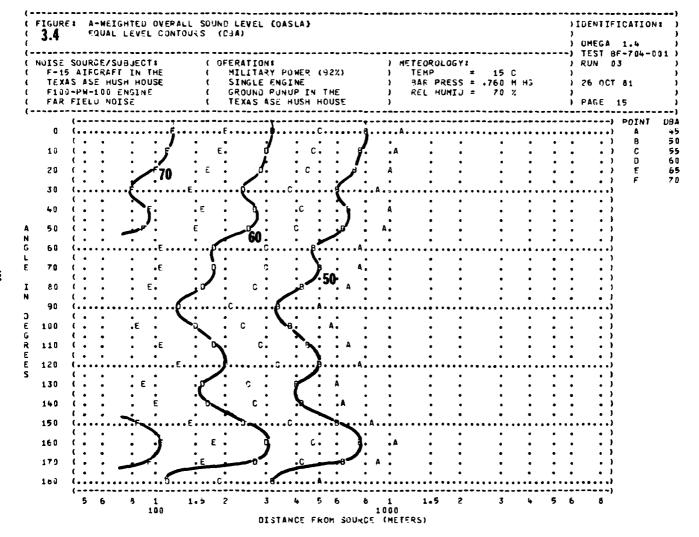


Ė



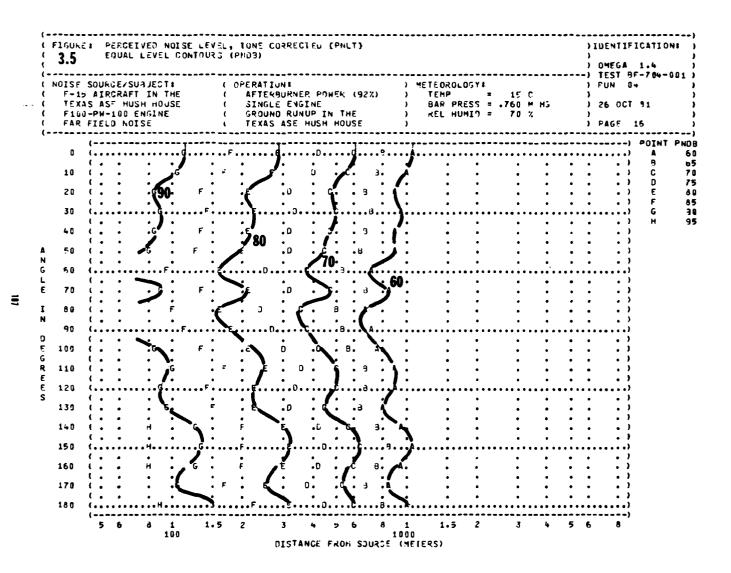


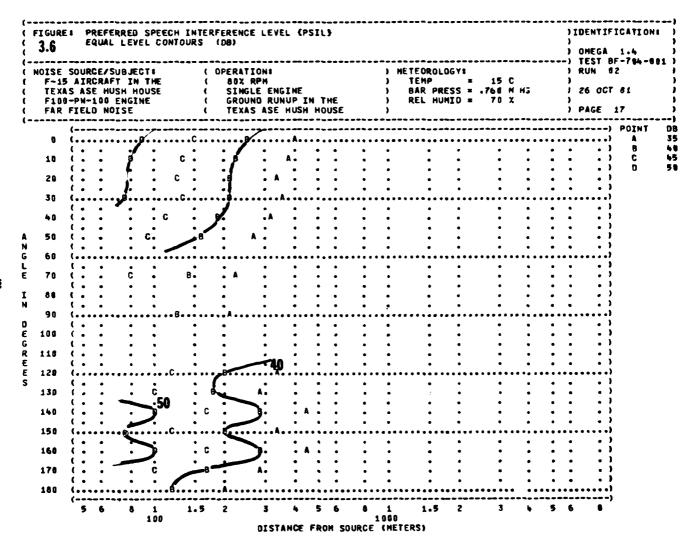




Ī

Ĩ





```
MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) EQUAL TIME CONTOURS (MINUTES)
FI CURE :
                                                                                                                     ) IDENT IFICATIONS
                                                                                                                       OMEGA 1.4
TEST BF-704-881
RUN 81
NOISE SOURCE/SUBJECT:
F-15 AIRCRAFT IN THE
                                       OPERATION:
                                                                               HETEOROLOGY 8
                                                                                  TEMP 15 C
BAR PRESS = .760 H HG
                                          PERMITONS
IDLE PONER (66%)
SINGLE ENGINE
GROUND RUNUP IN THE
TEXAS ASE HUSH HOUSE
  TEXAS ASE MUSH HOUSE
F188-PM-188 ENGINE
FAR FIELD MOISE
                                                                                                                       26 OCT 81
                                                                                                                     PAGE
    1<
   18<
  284
  38 <
                        PERSONNEL HAY BE EXPOSED UP TO 968 HINUTES PER DAY
                        AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN
                                                                                                75 HETERS
  51 <
  65<
                        FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
                        UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
  78<
                               NO PROTECTION
  88 <
  98 <
                               MINIMUM QPL EAR MUFFS
                               AMERICAN OPTICAL 1768 EAR HUFFS
 108<
 118<
                               V-51R EAR PLUGS
                              COMFIT TRIPLE FLANGE EAR PLUGS
 120<
 130<
                               H-133 GROUND COMMUNICATION UNIT
 140<
 160<
 1884
```

1.5 2

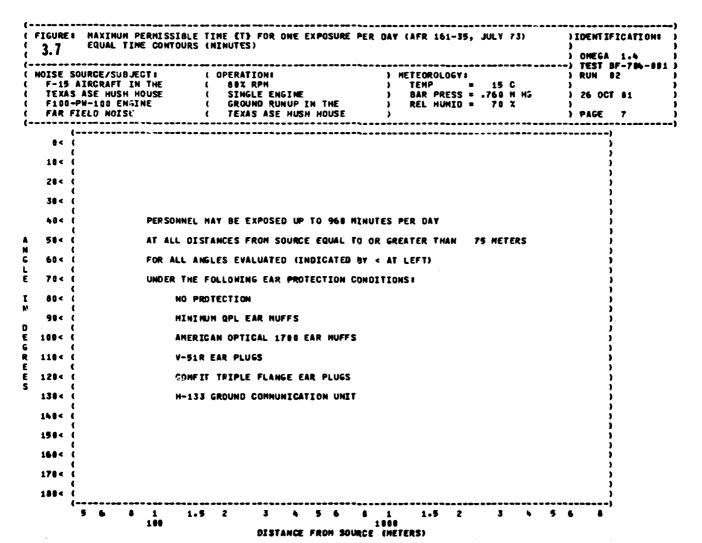
1900

DISTANCE FROM SOURCE (HETERS)

=

5

1.5



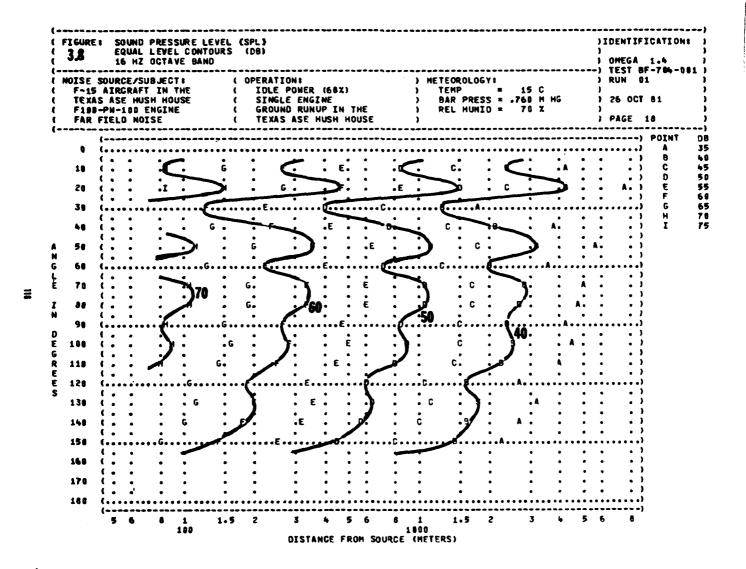
1 0 0 0

DISTANCE FROM SOURCE (METERS)

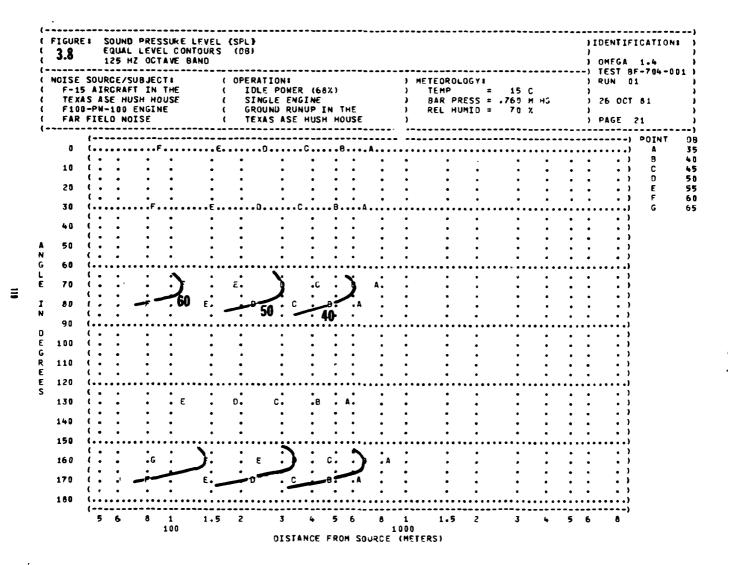
1.5

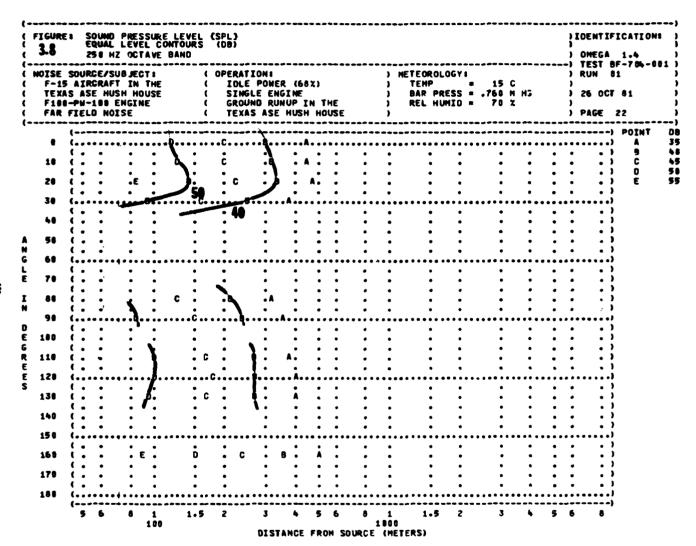
188<

DISTANCE FROM SOURCE (METERS)

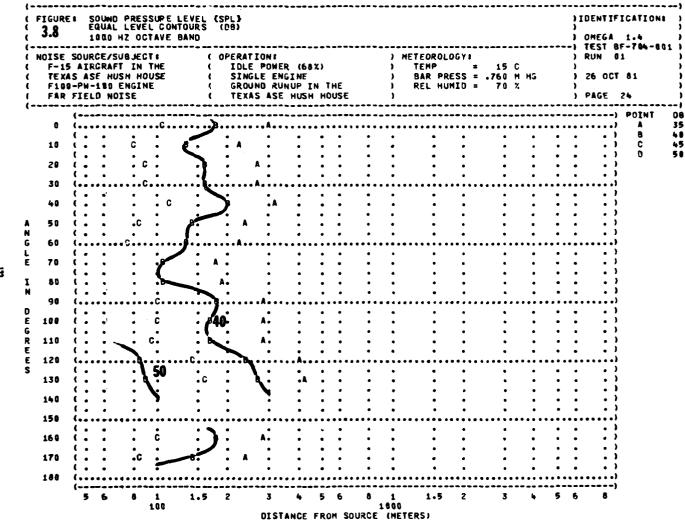


Ξ





Z



ī

ន

=

ŏ

FIGURE : SOUND PRESSURE LEVEL (SPL)

ŝ

Ę

DISTANCE FROM SOURCE (METERS)

METEOROLOGY: TEMP

1.5

3

5 6

TEHP = 15 C BAR PRESS = .760 M HS REL HUMID = 70 %

IDENTIFICATION:

TEST 8F-704-001

OMEGA

RUN 02

) 26 OCT 81

표

160 170 180 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1080 HZ OCTAVE BAND

100

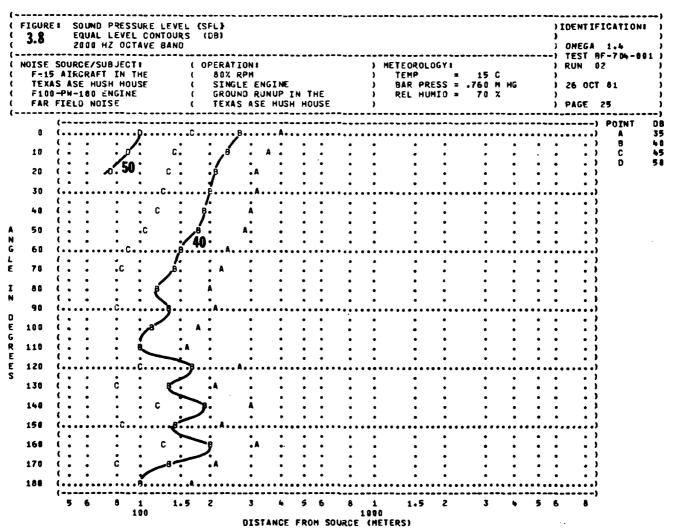
OPERATION:

SINGLE ENGINE GROUND RUNUP IN THE

FIGURE:

NOISE SOURCE/SUBJECT: F-15 AIRCRAFT IN THE

TEXAS ASE HUSH HOUSE F180-PH-100 ENGINE



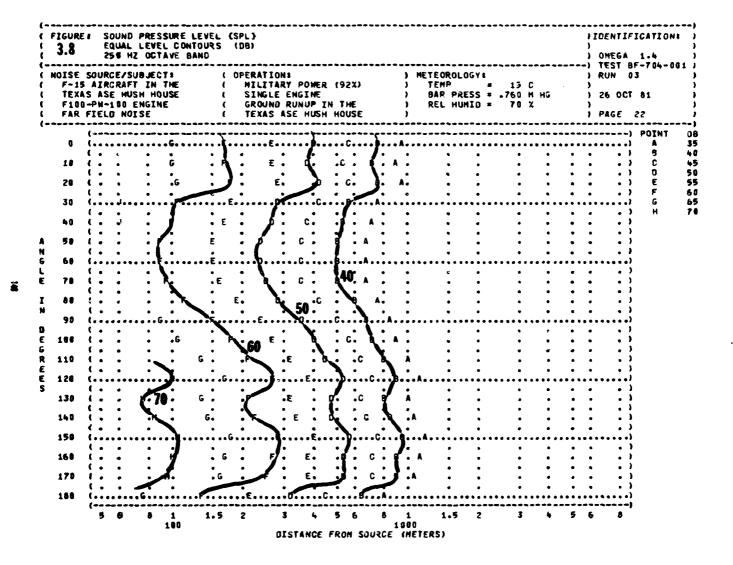
Ę

Ē

=

ä

ä



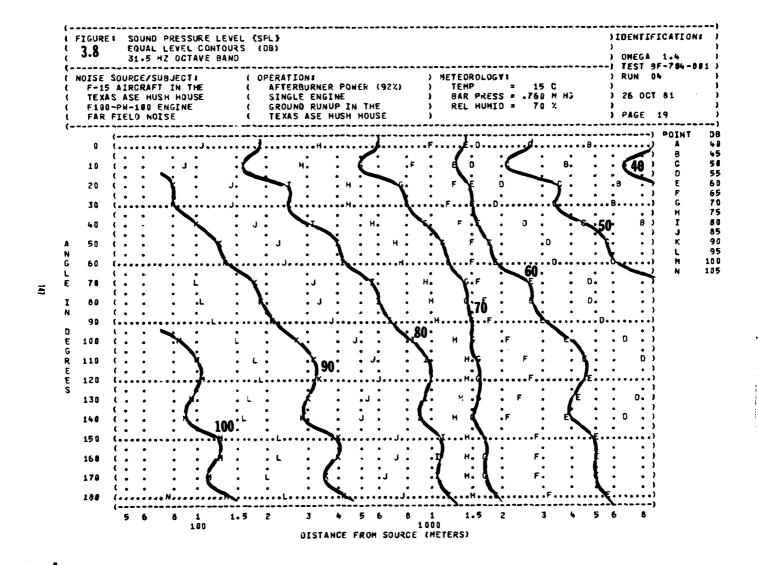
፷

ã

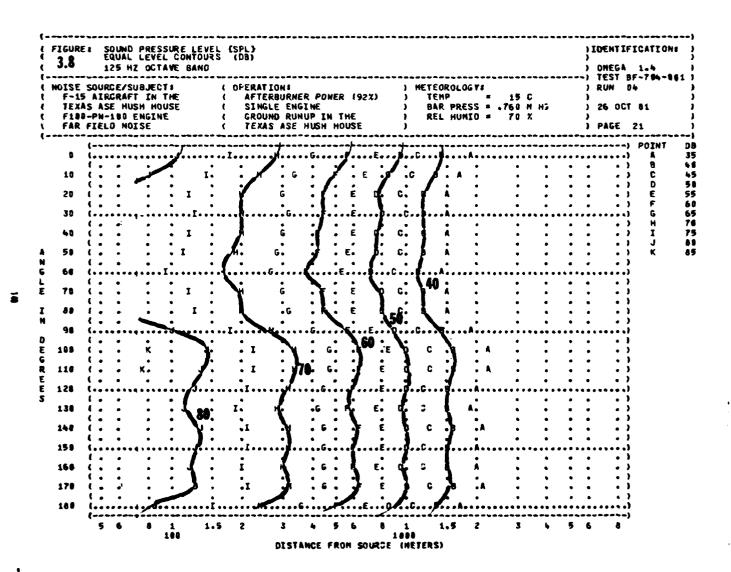
ž

Ē

ā



=



ũ

Œ

Ē

.....

Ē

TABLE 4.1

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS F-16 AIRCRAFT IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-705-001

Aircraft Engine Operation	Si	ingle Engine
Idle	67	% RPM
Tute	1000	LBS/HR FF
	450	FTIT
80%	80	% RPM
3070	4600	LBS/HR FF
	815	FTIT
Military Power	92	% RPM
William y 1 ower	7200	LBS/HR FF
	925	FTIT
Afterburner Power	92	% RPM
Anterbarner 2 ower	37,300	LBS/HR FF
	925	FTIT
Meteorology		
Temperature	31	C
Bar Pressure	.760	M Hg
Rel Humidity	62	%
Wind - Speed	2	M/Sec (4 Kts)
- Direction	170	Deg

OISE SOU F-16 AI TEXAS A F100-PH FAR FIE FREQ (HZ)		SUBJE AFT IN HUSH H	CT : THE		/ 00													DMEGA FEST B		5-0 0 :
FREQ			DUSE		(ERATIO IDLE P Single	NI OWER ENGI	(68%) NE) ME	TEOR	DLOGY : PRESS	= 3 = .76	1 C	45)	RUN 0 26 OC1	_	
FREQ																		PAGE	_	
										GLE (
		•	10	20	30	40	50	60		8.0			110	120	130	140	158	168	179	168
12.5 16 20 25	5			61<	624					65 < 63 < 60 < 59 <			59<	61<	62<	62<	62<	62<	62<	62
31.5	;			58<		57 <														
4 0 5 0						59<								62<	58<	58<	56<	58<	58<	58
63 88												52<	65<							
188																				
125 160																				
28 8																				
2 5 0 31 5																				
488																				
56.6																				
634															43<		43.	43<	434	4.3
1000		39<												48<	• •	• •		45 <		
1250		464		39<		41<	39<							39<	• -		44<		444	44
1600		48<		45<	44<	444	424	484						39<			45<		45<	
5000		404												37<	43<		43<	43<	43<	41
2500 3150		46<	47 46	46<	46<			43<		35 <	32-				38<	41< 38<				-
4888		- 77	41	35<	33<		33<			31<				31<	34<					
5001		45	43	36	39	36 <	36 <	36<	39		38<			29<	314	31<	31<	31<	31<	
6300		43	48	37	38	35 <	344	32<			26<			27 <	284					
8800		42	39	26	36	35	33<	32<	35	25<	29<		29<	28<	28 <	28<	28<	26 <	26<	26
19880		36	33 <	30<	30<	27 <	26<	26<	38<	27 <	56<	24<	26 <	25<						

[«] LEVEL CORRECTED TO REHOVE BACKGROUND/ELECTRONIC NOISE.

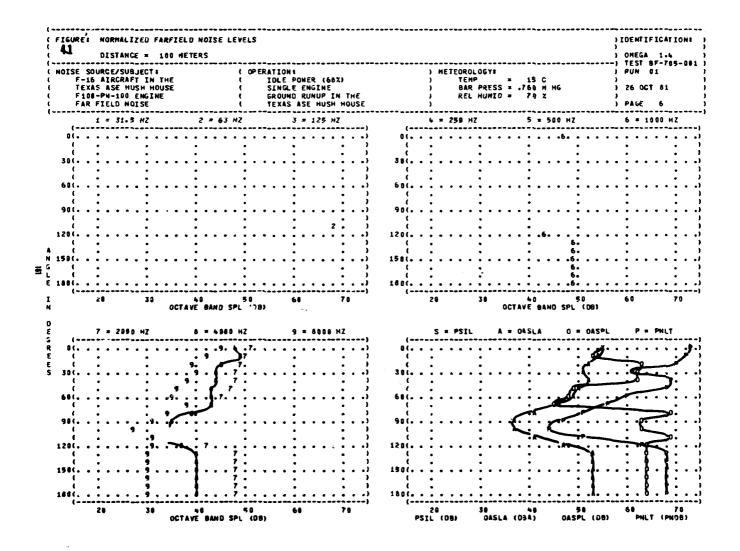
A 2 1/3	SURED S OCTAVE Tance =	BAND)		LEVEL	(OB))	DENTI OHEGA		ION
OISE SOURCE	SUBJEC	T #		(OP	ERATIO	N S) ME	ETEOR	OLOGY			**)	TEST		5 - 0
TEXAS ASE	-				SINGLE		NE)	TEMP	PRESS		31 C	4-)	26 OC		
F100-PW-10				•	GROUND			THE		;		HUMID		52 %	7	ź	20 00	1 81	
FAR FIELD		-			TEXAS			–		,						-	PAGE	2	
FREQ									GLE (•
(HZ)	0	10	20	30	40	50	60	70	80		100	116	120	130	140	150	160	170	18
42 5	75	7.0			•														_
12.5 16	70	72 71	75 71	74 72	74 74	74 72	72 74	74 78	75 78	76	77	77	77 76	75	75	75	75	75	7
20	67<	67 <	69	70	72	72	73	76	76	76 76	74 77	77 79	76	78 76	78 76	78 76	78 76	78 76	71
25	65<	62 <	65<	64<		67	70	71	72	73	75	75	76	75	75	75	75	75	7
31.5	64<	61 <	60<	62<		64<	63<	64<	64<	65<	68	70	70	72	72	72	72	72	7
40	60<	61 <	-	62<		63<	62<	64<	62 <	61<	62<				6.6	68	68	68	6
50	59<				58 <	57 <	58<	62<	60<	58<	60<	61<	61<	64<	64 <	644	644	644	6
63																			
80																			
100																			
125																			
160																			
200 250																			
315																			
408																			
500																			
630	43<			42<									45<	46<	46<	46<	46<	46<	40
800	40<			41<									45<	494		49		494	
1000	43<	39 <		40<	40<	39 <							47<	52	52	52	52	52	5
1250	45<	43<	40<			42<							47<	51	51	51	51	51	5
1508	46<	45 <	43<	43<	43<	41<	39<						47<	53	53	53	53	53	5
2 0 0 0	41<	40 <											46<	51	51	51	51	51	5
2500				36<									43<	44<		444		44<	4.0
3150													40<	42<		424		42<	4
4000 5000	29<	33 <	71.	33<	74.0	30<	28<	30< 33<	74.			27.	37<	38<		38 <		38<	3
5 8 U U	35< 34<	33 < 31 <	31< 32<	33<		3U < 29 <	28<	33< 31<	31 < 29 <	25<	24<	27 < 26 <	35< 32<	35< 32<		35<		35< 32<	39
8000	30<	27 <	27<	29<		27<	26<	31<	29 <	25<	27<		30<	31<		314		32<	3:
10000	29<	25 <	27<	27<		25<	24<	27 <	26 <	23<	25 <	28<	25<	27<		27		27<	27
OVERALL	77	76	78	76	79	78	79	82	82	81	82	83	83	83	83	83	83	83	8

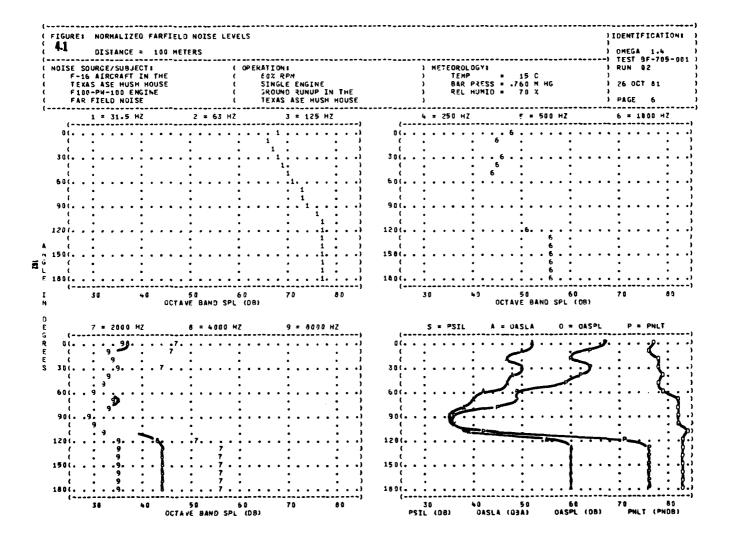
	ABLET	1/3 0	RED S CTAVE NCE =	BAND			LEVEL	(68))	DENTI		
7	F-16 A) TEXAS / F100-P) FAR FIG	JRCE/S LAGRAF ASE HU	UBJEC T IN ISH HO ENGIN	T t THE USE	****	(OF	ERATIO MILITA SINGLE GROUNO TEXAS	NI RY PO ENGI RUNL	HER (NE IP IN	92%) THE	****		TEMP BAR	OLOGY: PRESS HUMID	: = .7	31 C)))	DMEGA TEST RUN 26 OC1	BF-70	
-	FREQ	• • • • • •								AN	GLE (
	(HZ)		0	10	20	30	40	50	60	70	80	90		110	120	130	140	150	160	170	188
							•••				• -										
	12.	5	84	84	63	63	82	84	84	85	85	86	85	87	87	84	84	84	84	84	84
	16		82	82	85	82	83	83	85	85	86	87	88	88	86	87	87	87	87	87	87
	20		79	78	60	81	82	84	85	85	85	86	68	87	8 3	87	87	87	67	67	87
	25	_	71	70	74	75	60	77	79	82	83	82	85	85	87	67	87	87	87	87	87
	31.9	•	72	68	69	72	75	75	73	74	75	76	81	82	83	84	84	84	84	84	84
	40 56		7 0 6 5 <	73 66 <	72 68<	73 58<	76 : 71	75 72	75 72	75 73	73 72	72 71	75 70	77 70	80 74	81 75	81 75	81 75	81 75	81 75	81 75
	63		63<	00	864	יספי	, ,,	65<	62<	67<	58<	67<	70<				69<	69<	69<		
	60		0.3					06.	021	63<	66<	67<	65<		68<	68<	68<	68<	68<	68<	
	100		63<							0.51	90 -	63<	64<				65<	65<	65<	65<	
	125		62<									05-	044	00 4	0, -	• • • • • • • • • • • • • • • • • • • •	0,5	4,1	V ,	0,1	•
	16.9		53<									58<	60<	60<	64<	66<	66<	66<	66<	66<	66
	200											57<	63<	60<	66	69	69	69	69	69	69
	25 0											54 <	57<	60 <	64 <	66	66	66	66	66	66
	315		50<	48 <	49<							49 <	51<	53<	55<	60	60	68	60	60	60
	400		53<	50 <	494	49	1							49<	50<	56<	56<	56<	56 <	56<	56
	500		58	59	53<	57	55 <	55<	52<	55 <	45 <			47<	46<	52<	52<	52<	52<	32<	52
	630		58	56	53	55	53	54	52<	52<	47 <	47 <	44<	47<	46<	52<	52<	52<	52<	52<	5 2
	800		57	56	54	55	54	53	5.4	53	49 <	50<	47 <	49<	48<		56	56	56	56	56
	1006		57	55	52	54	54	53	51	51	45 <	45 <	44<				55	55	55	55	55
	1250		56	54	51	53	53	52	50<	49<	45 <	46 <	45<				55	55	55	55	55
	1600		>>	53	49	51	51	50	48<	46<	45<	46<	444		46<		55	55	55	55	55
	2060		494	48 <	474	48<		44<	45<	44<	42<	43<	43<				52	52	52	52	52
	2560		424	424	424	44		41<	40<	40<	39 <	41<	40<		421		49	49	49	49	49
	3150		36<	37 <	36<	37		3/<	38<	43<	39 <	43<	39<				48	48	48 45	48	46
	4000		34<	35 < 36 <	34< 33<	154		35< 34<	37< 36<	47 37 <	38 < 37 <	40< 39	36< 38<		39< 39	44	45 44	45 44	42	45 44	47
	5000 6300		36< 35<	35 <	33<	36<	33<	34<	36 36	44	37	39 37	36	36	37	41	41	41	41	41	41
	8000		34<	36 <	324	35	33<	33<	34<	41	36	37	36	37	37	41	41	•1	41	41	41
	10000		30<	30 <	30<	31<		31<	31<	42	35	34<	33<	-	34 <	37	37	37	37	37	37
	OVERALI	L	88	87	87	87	85	89	90	91	91	92	93	93	94	94	94	94	94	94	94

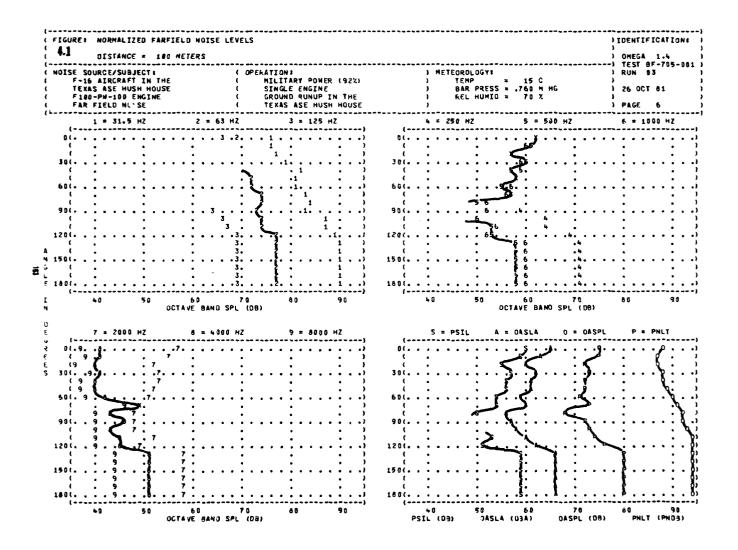
[«] LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

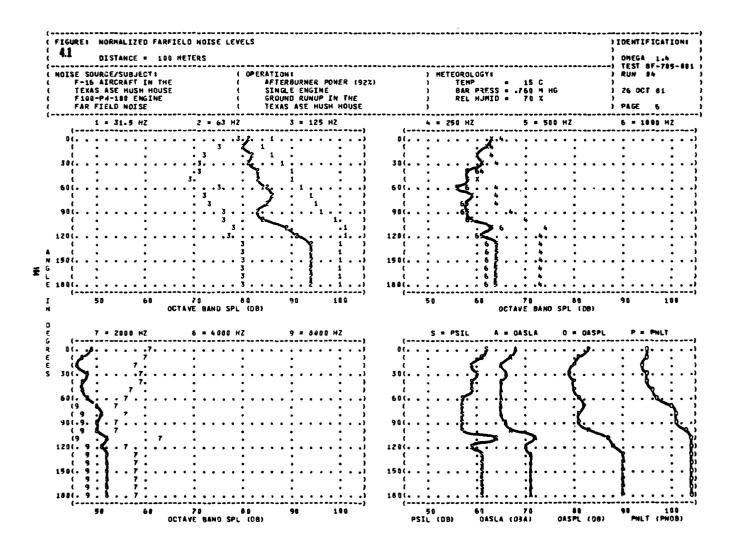
TABLE: HE	EASURED S /3 OCTAVE ISTANCE =	OUND BANC	PRESS	SURE)	DENTI OMEGA	1-4	
HOISE SOURCE	CE/SUBJEC	Ta		(01	PERATIO	N #						OLOGY				-		84 - 7 T	-UU1
F-16 AIRC	CRAFT IN	THE		(AFTERB	URNER	R PON	ER (9:	2%))	TEMP	•	=	31 C)			
TEXAS ASE F100-PW-1	E HUSH HO	USE		(SINGLE)	BAR	PRESS	= .7	'68 H	HG)	26 OC	T 81	
	100 ENGIN	ŧΕ		(GROUND	RUNI	JP IN	THE)	REL	HUNID	=	62 X)			
FAR FIELD	D NOISE				TEXAS	ASE H	1USH	HOUSE)						-	PAGE	2	
FREQ										(DEGR									
(HZ)	0	10	20	30	46	50	60	78	80	98	100	110	120	138	148	150	168	170	180
									_										
12.5	91	91	69	89	89	98	87	89	94	92	94	93	94	95	95	95	95	95	95
16	90	89	88	89	89	90	91	95	95	94	96	97	95	95	95	95	95	95	95
20	86	87	86	90	59	90	92	94	94	96	96	98	99	97	97	97	97	97	97
25	82	81	84	86	88	88	90	93	93	94	97	98	98	97	97	97	97	97	97
31.5	8.0	77	79	80	81	84	86	86	88	91	93	95	95	94	94	94	94	94	94
49	8.0	79	79	81	81	82	83	85	84	86	91	93	94	95	95	95	95	95	95
56	77	78	81	79	82	82	83	85	82	79	81	87	90	92	92	92	92	92	92
63	77	75	74	76	76	76	80	80	79	79	79	82	83	88	88	88	86	88	88
80	74	72 <	72<	71		70<	75	75	75	76	79	83	79	82	ê 2	82	82	82	82
108	76	73	70<	69		67 <	73	70<	71<		74	76	75	78	78	76	78	78	78
125	74	78 <	66<	65	< 56<	63<	68<	67<	55 <	69<	70<	70<	69<	71<	71<	71	< 71<	71<	71<
16 B	68	64 <	61<	63	< 61<	62<	65<	63<	63<	66<	69	70	68	70	70	70	70	70	70
200	62<	68 <	59<	60		58<	61<	61<	60 <	64<	67	71	68	70	78	78	70	70	78
25 0	59<	58 <	59<	59	< 57<	55<	60<	59<	60<	62<	65	69	70	70	78	70	70	78	70
315	57<	55 <	56<	55	< 51<	50<	53<	54<	55 <	58 <	68	62	63	64	64	64	64	64	64
406	58	56 <	54<	55	< 51<	48<	49<	51<	53<	54<	56<	59	58	60	60	60	60	68	68
500	58	58	56<	57	55<	55<	52<	55 <	52<	52<	54<	57	56<	58	58	58	58	58	58
630	58	57	55	55	53	55	52<	54	53	52∢	53	56	53	57	57	57	57	57	57
800	56	55	53	55	53	53	53	54	52	53	53	58	55	57	57	57	57	57	57
1000	58	57	54	55	55	55	52	52	52	51	52	59	56	57	57	57	57	57	57
1250	59	59	56	57	57	56	53	54	53	52	52	61	55	57	57	57	57	57	57
1600	6.0	58	55	56	57	55	53	51	53	51	51	61	53	55	55	55	55	55	55
2000	55	54	53	54	52	51	51	49<	51	49<	49<	58	51	52	52	52	52	52	52
2500	47	48	49	50	51	47	46	45<	46	46<		-	48	49	49	49	49	49	49
3150	44	424	424	66	44	43	45	46	46	46	45	69	47	48	48	48	46	48	48
4000	42	41	41	43	40 <	41	43	44	45	44	44	46	45	46	46	46	46	46	46
5000	44	42	40	42	40	40	41	43	45	46	44	44	44	45	45	45	45	45	45
6300	42	42	40	42	4.0	39	40	42	44	43	43	42	43	44	44	44	44	44	44
8000	41	40	39	41	39	37	39	4.3	43	43	43	43	44	44	44	44	44	4.4	44
10000	37	36	35	37	36	34<	36	40	41	41	42	40	43	43	43	43	43	43	43
OVERALL	95	95	94	95	95	96	97	100	101	101	103	104	104	104	104	184	184	104	104

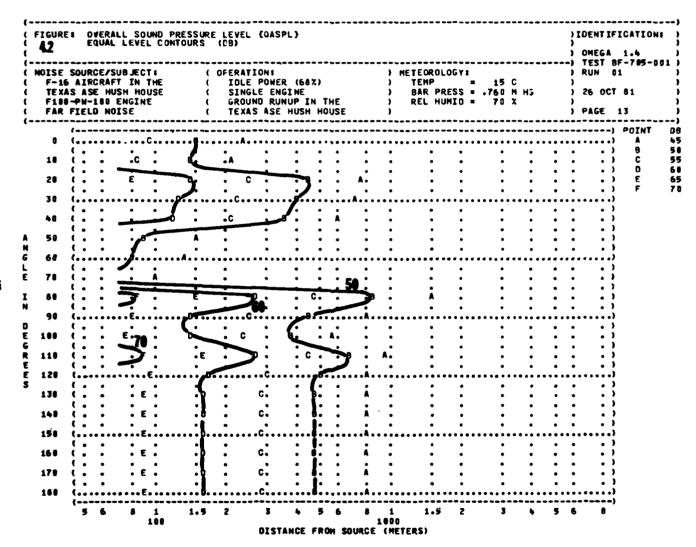
LEVEL CORRECTED TO REHOVE BACKGROUND/ELECTRONIC NOISE.



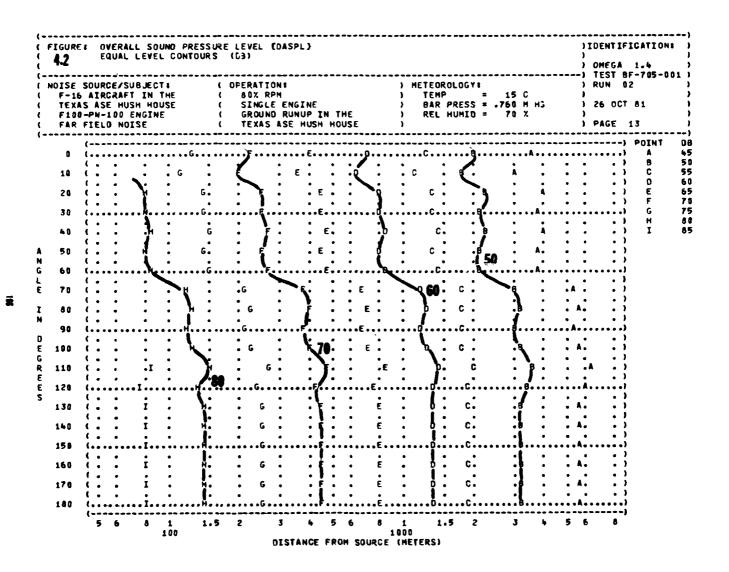




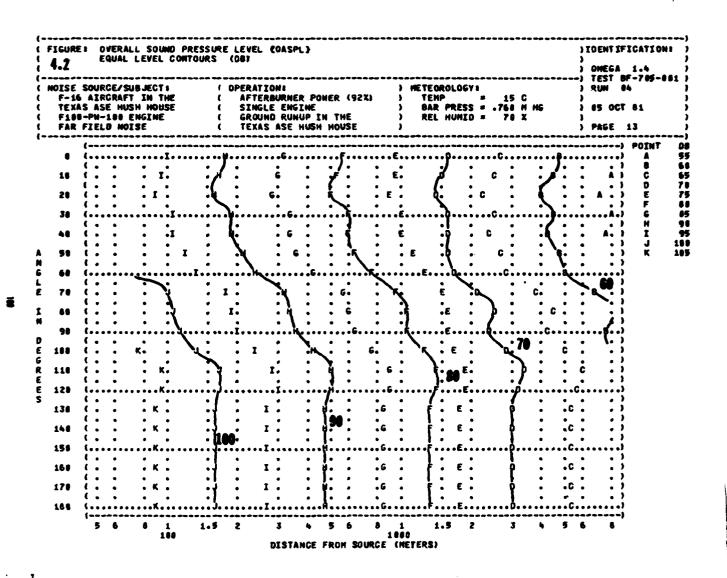


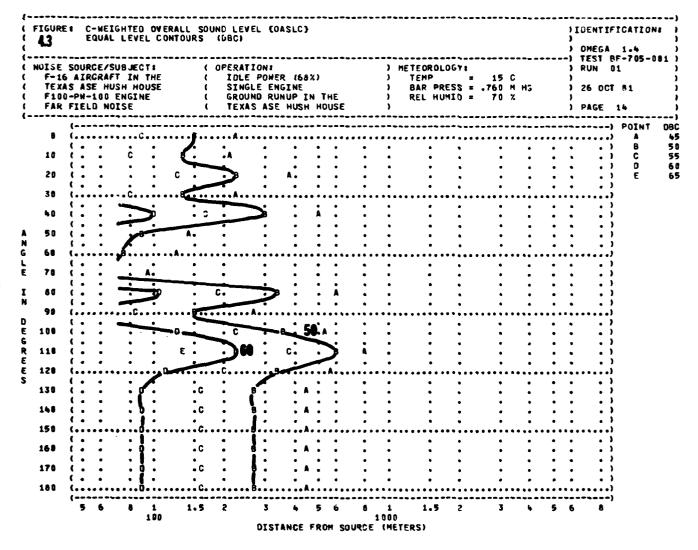


ã



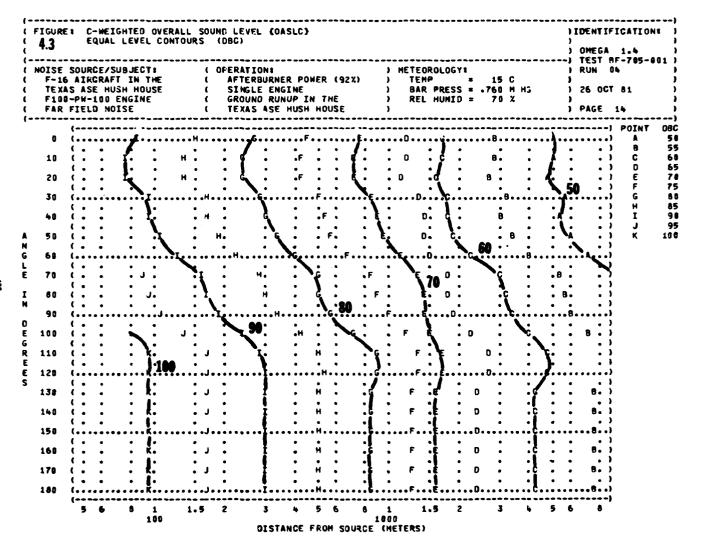
=

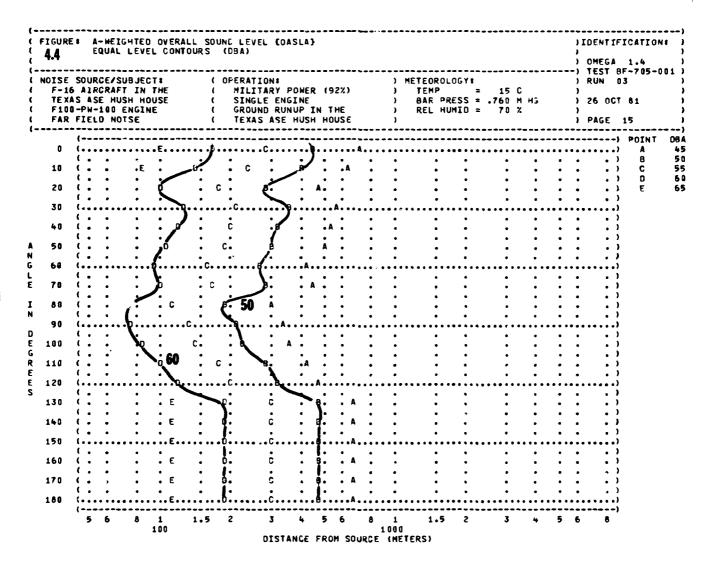




¥

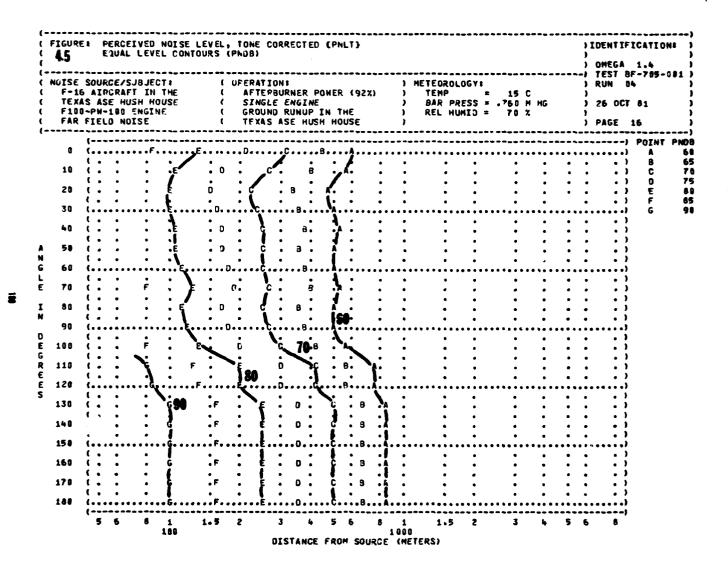
₹





=

===



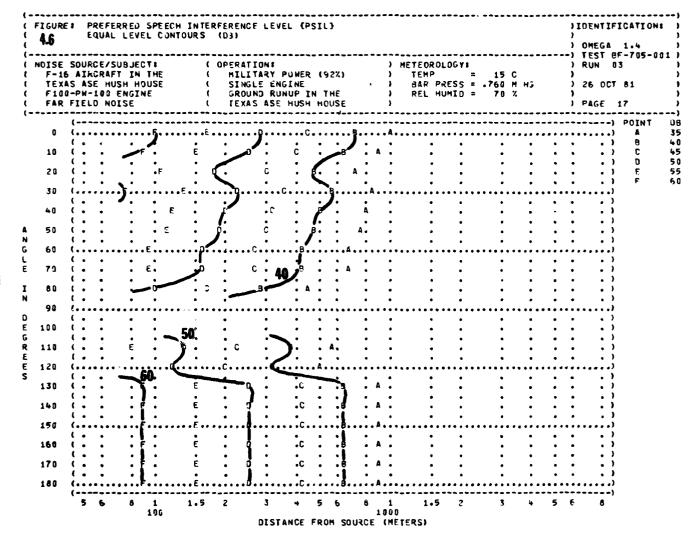
4.5	EQUAL LEVEL CONTO	UK2 (08)) OMEGA 1.4
NOISE SOU	URCE/SUBJECT:	(OPE	RATIONS		METEOROLOGY) RUN 01
F-16 A1	IRCRAFT IN THE	([DLE POWER (68%)	•	TEMP	= 15	C)
TEXAS A	ASE HUSH HOUSE	(5)	INGLE ENGINE	3	BAR PRESS	760	H HG	3 26 OCT 81
F188-P	N-108 ENGINE	(GI	ROUND RUNUP IN THE	3	REL HUMID	= 70	X	•
FAR FIE	ELD NOISE	(T	EXAS ASE HUSH HOUSE)) PAGE 17
			NO INPUT DATA WERE COMP REQUESTED IS GREATER TH			E0 1 E V		

.

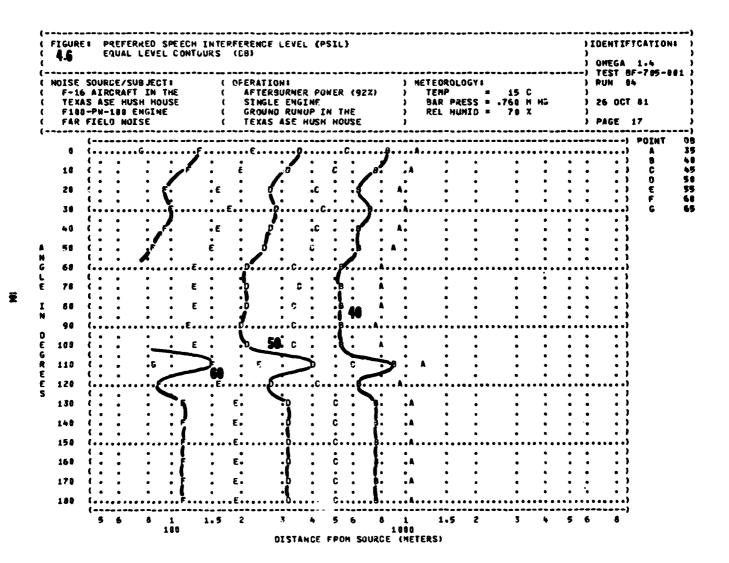
፷

NOISE SOURCE/SUBJECT F-16 AIRCRAFT IN T TEXAS ASE HUSH HOU F100-PH-100 ENGINE			FEOROLOGY:) TEST BF-705-00) RUN 02
FAR FIELD NOISE) E	TEMP # 15 C BAR PRESS = .760 M REL HUMID # 78 %)
	DATAEITHER NO INPUT DATA			, , , , , , , , , , , , , , , , , , , ,

Ē



Ē



```
FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
                                                                                                     ) IDENTIFICATION:
          EQUAL TIME CONTOURS (MINUTES)
                                                                                                       OMEGA
                                                                                                               1.4
                                                                                                        TEST BF-705-001
NOISE SOURCE/SUBJECT:
                                ( OPERATIONS
                                                                   ) METEOROLOGY:
                                                                                                       RUN 01
                                                                       TEMP = 15 C

MAR PRESS = .760 M H3
                                    IDLE POWER (68%)
SINGLE ENGINE
GROUND RUNUP IN THE
  F-16 AIRCRAFT IN THE
TEXAS ASE HUSH HOUSE
F100-PH-100 ENGINE
                                                                                                      ) 26 OCT 81
                                                                       REL HUNID .
                                                                                       70 %
  FAR FIELD HOISE
                                     TEXAS ASE HUSH HOUSE
                                                                                                       PAGE 7
   0 <
  10<
  20 <
  30<
                     PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
  48<
  50<
                     AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN
                                                                                   75 HETERS
  604
                     FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
                     UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
  70 <
                          NO PROTECTION
  60<
                          MINIMUM OPL EAR MUFFS
  90 <
                          AMERICAN OPTICAL 1700 EAR MUFFS
                           V-51R EAR PLUGS
 110<
 120<
                          COMFIT TRIPLE FLANGE EAR PLUGS
                          H-133 GROUND COMMUNICATION UNIT
 130 <
 140<
 150<
 160<
 170<
 180<
                                                                          1.5
                                                                              2
                                                                                        3
                                                                                                 5 6
                                          DISTANCE FROM SOURCE (METERS)
                     100
```

ij

4.7 Equi	L TIME CONTOURS	(HINUTES)	ER DAY (AFR 161-35, JULY 73)))
F-16 AIRCR	AFT IN THE HUSH HOUSF DENGINE	(OFERATION: (80% RPM) METEOROLOGY: } TEMP = 15 C) BAR PRESS = .760 M H3) RFL HUMID = 70 %) RUN 02)
0< ()
10< () }
20<))
30< (, ,
40<	PEF SONNE	. MAY BE EXPOSED UP TO 960 MI	NUTES PER DAY	; ;
50< (AT ALL D	ISTANCES FROM SOURCE EQUAL TO	OR GREATER THAN 75 METERS)
60< (FOR ALL	ANGLES EVALUATED (INDICATED 8	Y < AT LEFT)))
70< (UNDER TH	FOLLOWING EAR PROTECTION CO	NDITIONS:)
80< (NO (PROTECTION		1
90 < (MIN	INUM OPL EAR MUFFS))
100<	AME	RICAN OPTICAL 1700 EAR MUFFS)
110<	V-5:	IR EAR PLUGS) }
120<	COM	FIT TRIPLE FLANGE EAR PLUGS		,)
130<	H-1	33 GROUND COMMUNICATION UNIT		,
140<				; }
150<				į

5 6 8 1 1.5 2 3 4 5 6 8 1 1.5 2 3 4 5 6 100 Distance From Source (Meters)

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXFOSURE PER DAY (AFR 161-35, JULY 73) EQUAL TIME CONTOURS (MINUTES) 4.7 OMEGA 1.4 TEST 8F-705-001) METEOROLOGY: NOISE SOURCE/SUBJECT: (OFERATION:) RUN 03 TEMP = 15 C BAR PRESS = .760 M H3 HILITARY POWER (92%) F-16 AIFCRAFT IN THE TEXAS ASE HUSH HOUSE F100-PW-180 ENGINE SINGLE ENGINE GROUND RUNUP IN THE) 26 OCT 51 REL HUNID = 70 % PAGE 7 FAR FIELD NOISE TEXAS ASE HUSH HOUSE 0 < 10< 20< 30 < 40< PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 HETERS 50< 60 < FOR ALL ANGLES EVALUATED (INDICATED P . AT LEFT) L E 704 UNDER THE FOLLOWING EAR PROTECTION CONVITIONS: 80< NO PROTECTION MINIMUM QPL EAR MUFFS 90< AMERICAN OPTICAL 1708 EAR HUFFS V-51R EAR PLUGS 110 < COMPIT TRIPLE PLANGE EAR PLUGS 120 < H-133 GROUND COMMUNICATION UNIT 130 < 148< 150< 160<

DISTANCE FROM SOURCE (METERS)

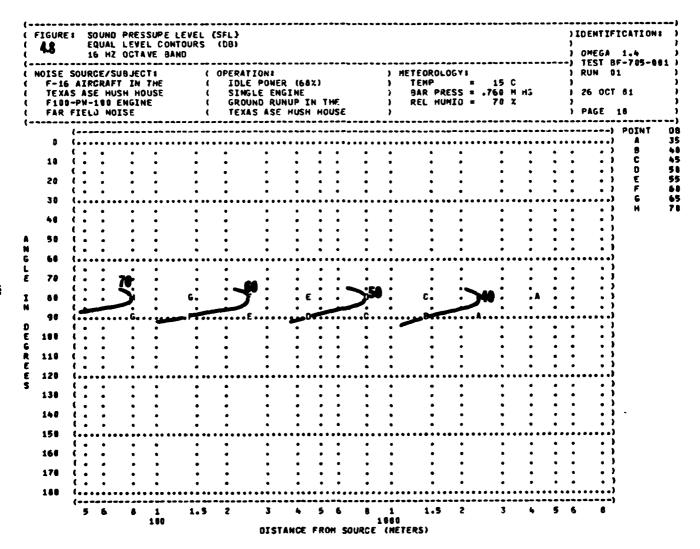
) IDENTIFICATION:

170 < 180<

F-16 AIR TEXAS AS F100-PW-	CE/SUBJECTS CRAFT IN THE	(OPERATION: (AFTERBURNER POWER (92%) (SINGLE ENGINE (GROJND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY:) TEMP = 15 C) BAP PRESS = .760 M H3) REL HUMIO = 70 %) TEST BF-705-0) RUN 04)) 26 OCT 81)) PAGE 7
0< ()
10< ()
20< (,
30< ()
40< (DEC SONNE	EL NAY BE EXPOSED UP TO 550 MI	INITES PER DAY	j
50< (DISTANCES FROM SOURCE EQUAL TO		į
(į
60< (ANGLES EVALUATED (INDICATED 6		į
78< (HE FOLLOWING EAR PROTECTION CO	DUDIT LONG !	<u> </u>
) > 0.6 (NO	PROTECTION) }
90< (IIN	NIMUM GPL EAR MUFFS)
100< (Ані	ERICAN OPTICAL 1700 EAR MUFFS))
110< (V-9	51R EAR PLUGS))
120< (CO	MFIT TFIPLE FLANGE EAR PLUGS)
130 < }	н-:	133 GRGUND COMMUNICATION UNIT		;
140<				į
150<				,
160< (•
170< () }
180< (,

Ē

	AIR FORCE AEROS USAF BIOENVIRON JUL 82 R A LEE AMRL-TR-75-50-V	7 04	ESEARCH LAB IATA HANDROOK IONES	WRIGHT-PATT VOLUME 172.	ETC F/G 20/1 HUSH-HOUETC(U)
30.9 6578					



Ē

FIGURE:	SOUND PRESSURE LE EQUAL LEVEL CONTO 31.5 HZ OCTAVE BA)JRS (DB)) IGENTIFICATION:) OMEGA 1.4) TEST BF-705-001
F-16 / TEXAS F100-	DURGF/SUBJECT: AIFGRAFT IN THE ASE HUSH HOUSE PM-100 ENGINE IELD NOISE	(OFERATION: (IDLE POWER (68%) (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASF MUSH HOUSE) METEOROLOGY:) TEMP * 15 C) BAR PRESS = .760 M HG) REL HUMID = 70 %)) RUN 01) 26 OCT 41) PAGE 19
		EITHER NO INPUT DATA WERE COMP IR LEVEL REQUESTED IS GREATER TH		

ž

4.8	E 6	QUAL 3 HZ	OCTA	L CONT		(87))) OMEG	BF-705-
F-16 TEXA	AIF	CRAF	T IN	THE	(((IDLE	POWER LE ENG	(68) INE) TE	MP R PRES	S = .7	15 C	H3) 26 O	
FAR	FIEL	0 NO	ISE		·	TEXA	S ASE	HUSH	HOU	SE) RE			, , ,) PAGE	20
	(-) POINT
	(.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•) B
		•	•	•	•		•	•	•	•	:	•) 0
20		•	:	•	•	•	•	•	•	•	•	•	•	•	•	•	:) E) F
30	(•••	• • • •	••••	• • • • •	•••••	•••••	••••	• • • • •	•••	••••	• • • •	· · · · · · ·	•••••	•••••	• • • • •	• • • •	• • • •		.) G
40	; ;	:	:	:	:	:	:	:	:	:	:	•	:	:	:	:	:		,
	(.	•	:	•	:	•	•	:	:	•	:	•	:		:	:	:	: :))
60	(-	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•
	(.	••••	• • • • •	•	• • • • • • •	•••••	•••••	•	•	•	• • • •	• • • • • • •	• • • • • • •	•	• • • • • •	••••	• • • •	•	•;
70	(•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•)
80		•	•	•	•	•	•	•	•	•		•	:	•	•		•	: :	j
90	· · ·	•		•		•		•	•	•	•	• •••••	• • • • • •	•	•	• ••••		• •	.) .)
100	(. (.	•	•	•	:	•	•	•	•	•	•	•	:	•	•	•	•	- •)
		:	:	:	•	•	:	:	:	•	:	•	:	•		•	:	-	;
110	(.	•	.н	•	G •	. F	•	•E	:	• D	.c	• B	Α.	•	:	•	:	: :)
120	···	• • • •	• • • •		• • • • • •		•••••	• • • • •	•••	• • • •	••••	• • • • • •	• • • • •	•••••	• • • • •	••••	• • • •	• • • • • •	•)
130	ì :	:	:	•	•	:	:	:	•	:	:	•	:	•	:	:	:	: :	;
140	(. (.	:	•	•	•	•	•	:	:	•	:	•	•	•		:	•	•)
	į :	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•)
	···	• • • • •	• • • • •	•	• • • • • •	•••••	•••••	•	•	•	•	•••••	•••••	•	• • • • • •	••••	•	•	;
160	(.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	:	•)
170		•	:	:	:	•	:	:	•	•	•	•	•		•		:		j
180	(. (•		•		•	•	•	•	•	•	• •••••	•	•	•	•	•	•	•)
	(6	8	1		2	3	4	5					2	3	 •	5		-)

₹

FIGURE				RE LEVE Contour													IDENT	IFICATIO)N 1
48				E BAND	•	(09)										1	ONEG	A 1.4	
																		RF-785-	
WISE !	SOUPC	E/SUB	JECTI	1	(DPERATI	ONE			- 14	ETEOR	OLOGYE				1	RUN	01	
F-16	AIRC	RAFT	IN TH	IE	(IDLE	POWER (682)			TEMP			15	C	1	,		
TEXA	S ASE	HUSH	HOUS	E	t	SINGL	E ENGIN	ξ)	SAR	PRESS	= ,	.768	H HS	1	26 O	CT 81	
F100	-PH-1	00 EN	GINE		(GROUN	B RUNUP	IN THE	Ε .)	REL	O INUH		70	X	1	,		
FAR	FIELD	NOIS	Ε		(TEXAS	ASE HU	SH HOUS	ξ :	•						1	PAGE	21	
****														••••					
	NO	CONT	OUR D	ATAE	ITH	EF NO I	NPUT DA	TA HERE	E COMPUTE	•	= 9999	. 0)							
	OR	MINI	MUM C	ONTOUR	LE VI	EL REQU	FSTED I	S GREAT	TER THAN	tA x	I HUN	COMPUT	EĐ	LEVE	FLA				

Ħ

FIGURE: SOUND PRESSURE LEV EQUAL LEVEL CONTOU 250 HZ OCTAVE BAND	RS (DB))IDENTIFICATIONS)) OMEGA 1.4) TEST BF-785-001
(NOISE SOURCE/SUBJECTS (F-16 AIRGRAFT IN THE (TEXAS ASE HUSH HOUSE (F100-PH-100 ENGINE (FAR FIELD NOISE	(OFERATION: (IOLE POWER (68%) (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY:) TEMP = 15 C) BAR PRESS = .768 M H3) REL HUMID = 70 %) RUN 01) : 26 OCT 81)) PAGE 22
(NO CONTOUR DATA (OR MINIMUM CONTOUR	EITHER NO INPUT DATA WERE COMPL LEVEL REQUESTED IS GREATER THA	UTED (=9999.0) AN MAXIMUM COMPUTED LEVEL.	

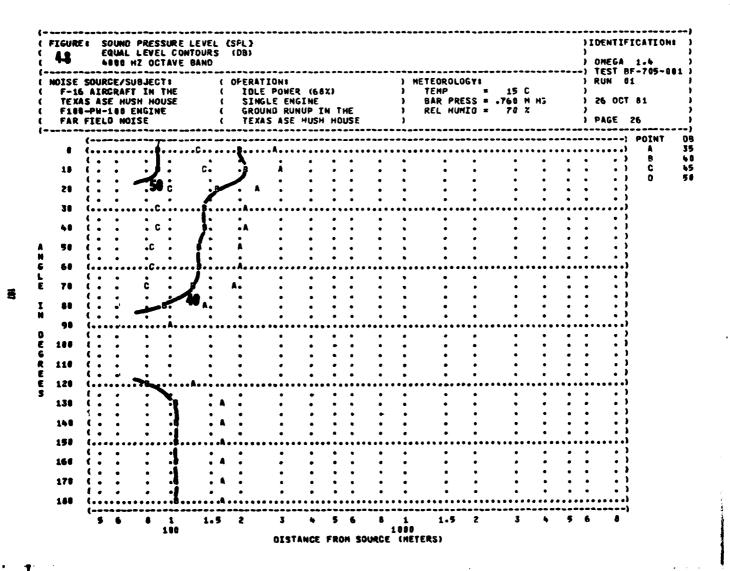
ž

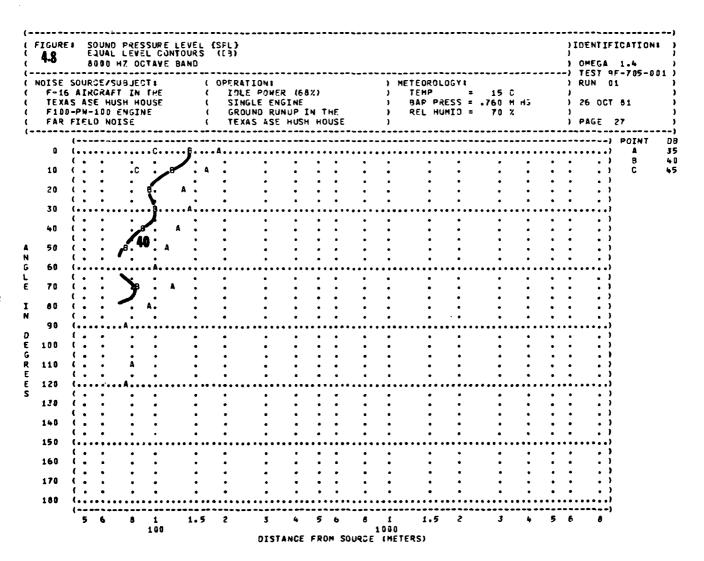
UBJECT:	(OFERATIONS) METEOROLOGY:) TEST BF-705-00:
) HEIEUKULUUTT) KUN 01
FT IN THE	(IDLE POWER (68%)) TEMP = 15 C)
) 26 OCT 81
	· · · · · · · · · · · · · · · · · · ·) REL HUMID = 78 %)
DIZE	(TEXAS ASE HUSH HOUSE)) PAGE 23
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
NT 0112 - 26 TA	ETTUEE NO INDUT DATA MEDE COMO	NITED (-8000 N	
	USH HOUSE ENGINE DISE	ISH HOUSE (SINGLE ENGINE ENGINE (GROUND RUNUP IN THE DISE (TEXAS ASE HUSH HOUSE	ISH HOUSE (SINGLE ENGINE) BAR PRESS = .760 M HS ENGINE (GROUND RUNUP IN THE) REL HUMID = 70 %

¥

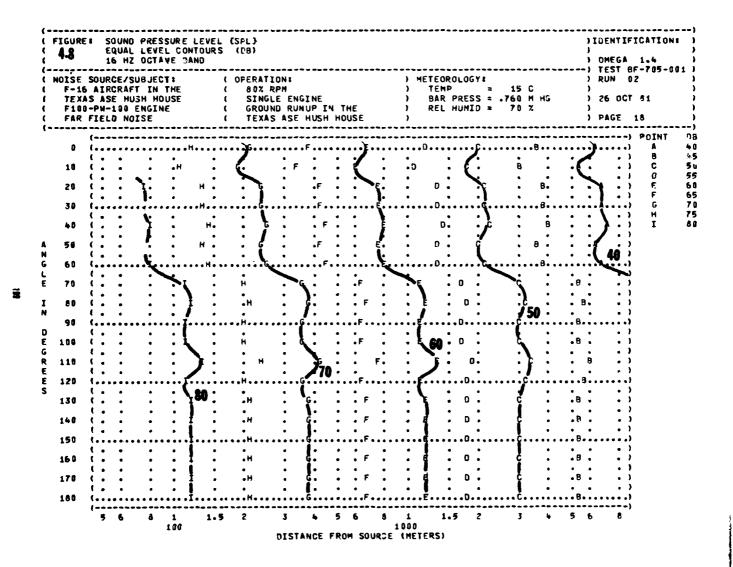
Ħ

ä





Ē



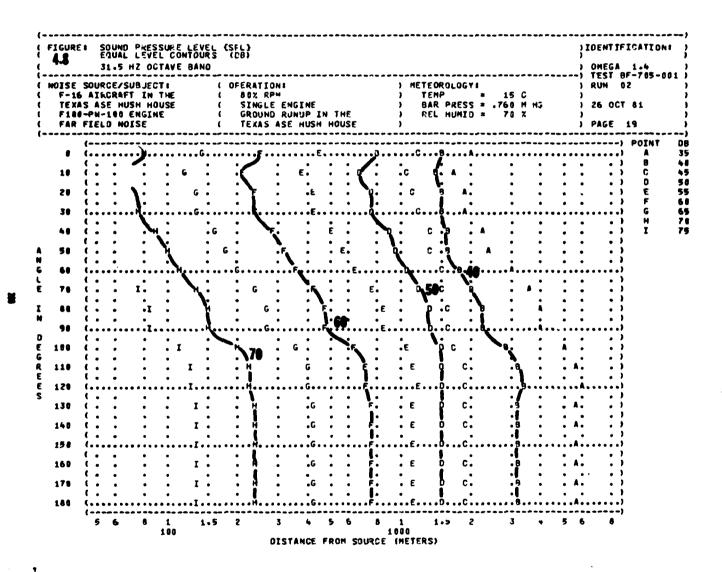


FIGURE:	SOUND PRESSURE LEVE EQUAL LEVEL CONTOUR 63 HZ OCTAVE BAND)IDENTIFICATION:)) OMEGA 1.4
F-16 A TEXAS F100-P	URGE/SUBJEGT: IRGRAFT IN THE ASE HUSH HOUSE W-100 ENGINE ELD NOISE	(OPERATION: (80% RPM (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY:) TEMP = 15 C) BAR PRESS = .760 M H3) REL HUMID = 70 %)) PAGE 20
((((EITHER NO INPUT DATA WERE COMPU Level requested is greater tha		

 \cong

FIGURE:	SOUND PRESSUPE LEV EQUAL LEVEL CONTOL 125 HZ OCTAVE BAND	JRS (DB))IDENTIFICATION*)) OMEGA 1,4 -) TEST BF-785-001
NOISE SOL	URGE/SUBJECT:	(OFERATION:) METEOROLOGY:) RUN 02
F-16 A	IPCRAFT IN THE	(80% RPM) TEMP = 15 C	3
TEXAS A	ASE HUSH HOUSE	(SINGLE ENGINE) BAR PRESS = .760 M HG) 26 OCT 81
F100-P	H-100 ENGIN€	(GROUND RUNUP IN THE) REL HUMID = 70 %)
FAR FIE	ELD NOISE	(TEXAS ASE HUSH HOUSE)) PAGE 21
		-EITHER NO INPUT DATA HERE (R LEVEL REQUESTED IS GREATER	OMPUTED (=9959.0) THAN MAXIMUM COMPUTED LEVEL.	******

(FIGURE: SOUND PRESSURE LET (4.8 EQUAL LEVEL CONTOU 250 HZ OCTAVE BANK) IDENTIFICATION:)) ONEGA 1.4		
(NOISE SOURCE/SUBJECT: (F-16 AIRCRAFT IN THE (TEXAS ASE HUSH HOUSE (F100-PM-100 ENGINE (FAR FIELD NOISE	(OFERATION) (80% RPM (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY:) TEMP = 15 C) BAR PRESS = .760 M H3) REL HUMID = 70 %)) RUN 02))) 26 OCT 81))) PAGE 22)
	-EITHER NO INPUT DATA WERE COMP R LEVEL REQUESTED IS GREATER TH)))

,

꼺

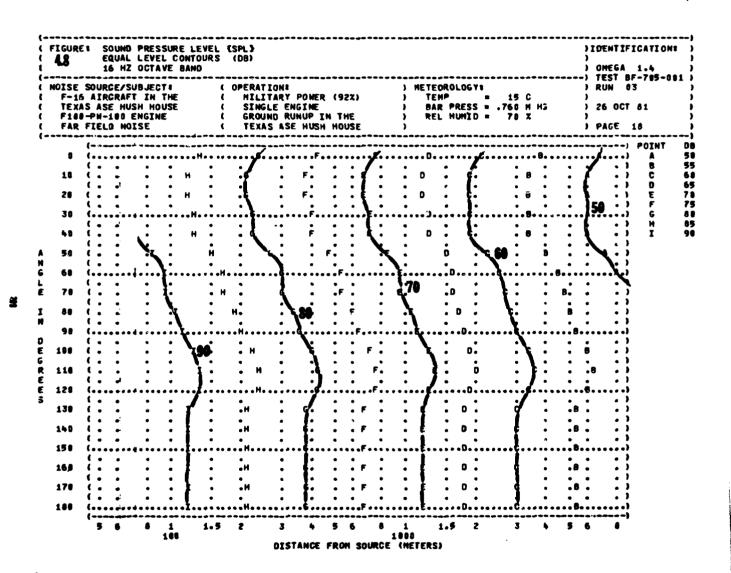
FIGURE: SOUND PRESSURE LE EQUAL LEVEL CONTO FOR HZ OCTAVE BAN	URS (DB)) OMEGA 1.4) TEST 9F-705-001
NOISE SOURCE/SUBJECT: F-16 AIRCRAFT IN THE TEXAS ASE HUSH HOUSE F100-PH-10J ENGINE FAR FIELD NOISE	(OPERATION: (80% RPM (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY:) TEMP = 15 C) BAR PRESS = .760 M HG) REL HUMID = 70 %) RUN 02)) 26 OGT 81)) PAGE 23
NO CONTOUR DATA UOTRES MUNIMIN SO	-EITHER NO INPUT DATA WERE COMP R LEVEL REQUESTED IS GREATER TH	UTED (=9399.0) AN MAXIMUM COMPUTED LEVEL.	

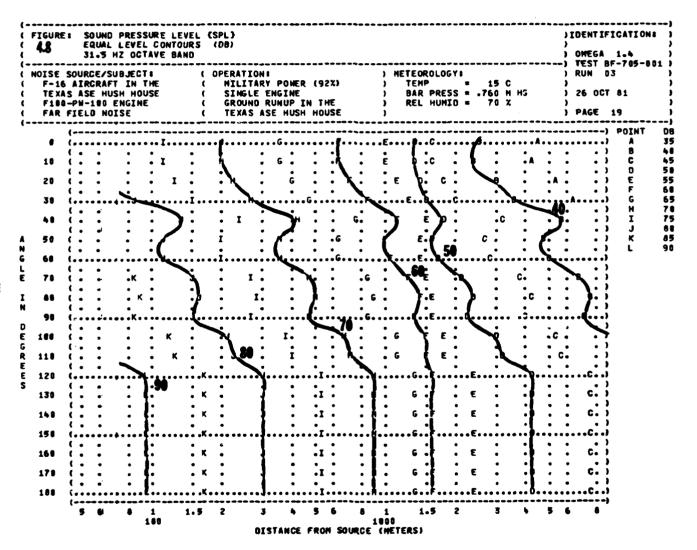
.

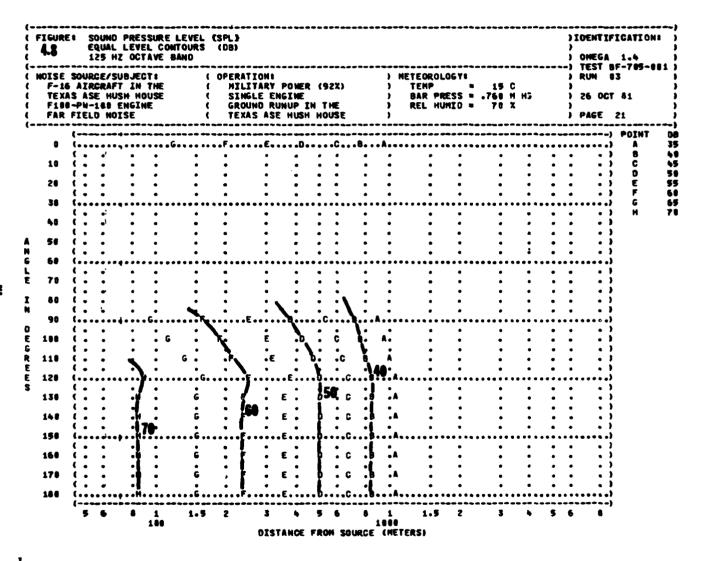
¥

4.8 OISE S F-16 TEXAS F100- FAR F	OUR AIR AS PH-	CE/S CRAF E HU 100 NO	HZ OC UBJEC T IN SH HO ENGIN ISE	TAVE TI THE USE E	BAND	OPER OPER OPER OPER OPER OPER OPER OPER	ATION: % RPH NGLE 1 OUND 1 XAS A:	I Engi Runu Se h	P IN USH	TH HOU	E SE		METE() TE() BAF	OROLOG 1P R PRES . HUMI	Y: S = (D =	15 (760 70	C H H3) TEST) RUN)) 26 ()) PAG(DCT 81
10 (C 20 (C 30 (C	•	•	16.			•	•	••••	••••	•	•••••	•	•	•	•	•	•	•	•) POINT) A .) B .)
40 (50 (•	. A		•	•	•	••••	•		• • • • • • • • • • • • • • • • • • •	•	• • • • • • • • • • • • • • • • • • •	•		•	•	•		,) ,) , 1 , 3
70 (0 80 (0 90 (0	•	:		A: :		•	•	••••	•	•	• • • •	•	• • • •	•	•	•	•		•	,) ,) ,)
100 (110 (120 (:					•	••••	•	• • • •	• • • •	•	· · ·	•	• • • •			:	•	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
130 (140 (150 (:			•		•		•	• • • • •	• • • •	•	•	•	• • • • •		•	:	•	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
150 (170 (160 (•	•	•	i i .i	•	•	•		•	•		•	•	•	• • • •	•	•		•	· · · · · · · · · · · · · · · · · · ·
(5	6	8	1 1 100	1.5	2	3		4	5	 6	-	1 :	1.5	s 	3	,	5	6 () }

.







=

z

tz

Ž

Ħ

.

TABLE 5.1

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS F-105 AIRCRAFT IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-706-001

Aircraft Engine Operation	S	ingle Engine	
90%	90 5000	% RPM LBS/HR FF	
	430	EGT	
Military Power	103	% RPM	
	1100	LBS/HR FF	
	614	EGT	
	2.35	EPR	
Afterburner Power	103	% RPM	
	1100+	LBS/HR FF	
	623	EGT	
	2.43	EPR	
Meteorology			
Temperature	28	C	
Bar Pressure	.748	M HG	
Rel Humidity	69	炻	
Wind - Speed	2	M/Sec (4	Kts)
- Direction	190	Deg	

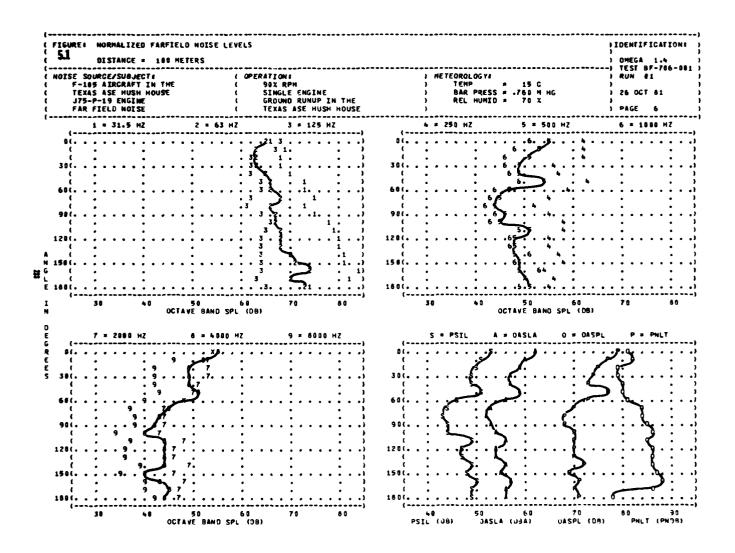
	DISTANCE URGE/SUBJE AIRGRAFT	CTI	0 4ET		FERATIO		· -					 20L06Y				;	OMEGA TEST PUN		
	MSE HUSH P			(SINGLE		TNE			,		PRESS		28 0	u :)	26 00	T 4 +	
	19 ENGINE			ì	GROUN		_	THE		;		HUMID		69 %	77.3	í	10 10	, 71	
-	FLO NOISE			Ċ	TEXAS)				•			PAGE	,	
FRED								Α	 NGL F	(0833	EES)								
(HZ)	0	10	2 C	30	•• 3	53	6 3	70	30	30	100	110	123	1 30	1 + 0	150	160	170	1 8
12.	5 79	78	7 b	7 3	7+	7.	73	77	17	7 =	79	79	74	79	7.7	70	76	7.8	6
16	75	77	74	74	76	74	7+	78	51	90	6.0	8.0	73	79	73	3.3	5 0	79	£
20	73	70	7 C	72	74	74	7+	79	76	73	o 0	76	79	79	A 0	3 8	e 2	70	6
25	61	65	67	64	57	73	72	7 र	71	73	75	77	73	73	7 5	78	8.9	79	۴.
31.5		62	58	61	64	63	45	65	5 ه	6 P	72	72	7+	74	75	75	7 A	77	٤,
40	61	64	60	62	64	65	55	68	5+	65	5 f	67	53	59	7 2	7.3	7.8	72	6
50	51	61	60	59	61	53	63	65	3 3	6?	f 3	63	63	4.	49	71	7.2	60	7
63 80	5) 6 1	5: 57	58 57	59 58	59	61	62 57	63	60	60	52	62	5+	64	61	51	66	64	6
100	5 L	66	60	59	6 J 5 A	59 59	5 7 5 9	60 58	ამ 59	5 ² 62	6.0 6.5	63 53	61	61	57 62	> F	50 62	56	5
125	5 2 5 2	56 59	5 b	55	59	5.0 5.0	59	54	55 55	97 27	57	5.7 5.7	61 51	61 50	57	51 50	57	61 56	6
150	5.5	56	55	55	99 96	ъ) Э	58	75 5.•	23	54	5.7	55	99	46	55	5,8	5.6	5 5	5
200	5 á	50	58	51	52	54	55	51	+9	53	6.6	55	5)	5 2	54	54	50	5 7	É
250	57	5/	59	53		b J	54	52	47	49	F 0	54	51	51	F 3	55	40	5 1	5
315	5.	52	51	45	47	54	<u> </u>	46	+2	44	54	49	45	45	4.5	4.8	46	46	4
400	5.2	51	45	45	43	53	43	+1	39	42	4 3	47	43	→ ₹	45	→ť	65	45	-
500	49	46	45	43	44	49	42	40	37	ડુવ	37	42	++	+ 4	4.3	→ 3	4.4	44	4
63C	4.8	44	43	42	45	48	40	41	49	→ 0	3€	45	+ 2	4.7	4 1	44	44	45	4
800	4?	44	41	40	44	46	41	<u> </u>	39	43	39	46	42	42	4 2	₩?	44	46	4
1000	46	43	41	41	41	43	3 9	37	35	36	19	L 3	→ 3	ъ. Т	40	43	4,0	44	4
1250	44	42	4.0	41	41	41	38	36	35	37	37	· ·	+1	41	47	43	49	45	4
160 0 2000	ن. 51	44 50	4.\` 5.1	42 50	41 48	+1	39	30	36	3 t	37	4,4	41	→1	45	+2	45	42	-
2500	5 I	47) i	47	49	46 45	45 42	41 39	+0 34	41	40 77	44 41	→1 4]	41 43	42	+1 3e	43	+2 41	4
3150	5 2	51		47	47	50	-7	42	• j	39	38	42	4.2	42	41	36	10	41	4
4000	49	45	42	40	40	42	39	37	37	36	33	37	35	₹£	38	36	7.0	40	3
5000	47	42	3 =	38	39	39	37	36	3 :	7.4	*1	35	33	5.7	34	34	76	37	3
6300	49	43	3 é	39	39	40	36	34	30	35	31	34	3.5	33	30	32	36	35	7,
2006	5 J	42	39	3ć	59	38	36	34	35	34	31	74	3,	32	1.2	31	37	17	7
10000	> 1	43	36	36	39	39	36	32	53	31	29	32	3)	30	37	2 %	37	37	7
OVERAL	. 31	51	79	78	83	8.0	b 0	A 3	٠٤	44	۵5	85	63	J F	85	47	3.7	56	7

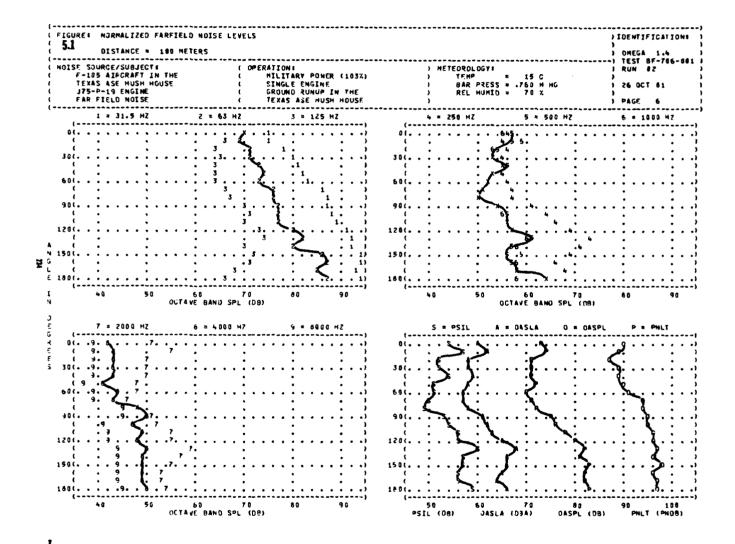
	SURED			SURF (LVEL	(03)) I	DENTI	FICAT	IONS
J.K PIS	TANCE :	100	MET:	= ? S)	OMFGA	1.4	,
																	TEST	AF - 70	16-CC
CISE SHUFCE					CHATI	-				-		KOLOGY					PUN	0.2	
F-105 A190								(103%)))	TEMP		=	28 C)			
TEXAS ASE		JUSE			SINGL			.)		مذذذك			H3	,	56 OC	T 81	
J75-P-19 5					GROUN		_)	N.E.L	СІРИН	=	69 %)		_	
FAR FIELD	MOISE			(TEXAS	v2E	HUSH	HOUSE		,)	DACE		
FREG								Δ,	NGLE	(0663	EES)								
(HZ)	J	16	20	30	40	50	60	70	30		100	110	123	1 30	1 4 0	150	160	170	1 8 0
12.5	8 5	36	51	94	8.3	8.2	40	67	37	36	26	89	93	99	27	85	84	59	84
16	55 55	37	82	94	3.5	9 ≤ 8 •	55	5 f	39	30	97	90	33	99	89	9.0	84	88	66
3.0	51	79	84	53	83	36	84	55	90	91	31	30	30	92	89	30	90	32	91
25	12	70	75	77	78	79	P ()	55	3. 35	خد	26	87	83	و و	6.8	91	69	90	0 1
11.5	b d	f, č	50	74	74	74	75	77	77	50	6.5	3 3	85	47	37	89	89	8.8	8
4.0	n d	71	71	73	75	7.5	7.5	7.7	7 b	76	77	81	32	3.3	86	97	8.6	97	8.9
r. G	67	67	76	69	72	73	7.2	14	74	75	74	73	73	79	79	84	85	84	
63	53	53	62	64	54	65	F. 5	6,3	9.3	71	7.3	73	75	79	71	79	80	78	8.0
3.0	54	61	61	50	5.2	6.2	6.2	67	57	70	70	7.0	15	7 2	7.0	73	72	71	7 2
100	e to	51	υg	60	5 ?	5 1	f 1	r 3	دو	67	58	6.9	73	7.0	67	70	69	65	€ 4
125	6.5	63	6.3	58	59	60	59	61	οO	64	65	65	Þΰ	U	65	56	65	57	Ę 9
160	01	50	55	56	56	55	>5	50	53	61	63	62	Óά	67	b 3	óĴ	63	63	£ 2
?uû	52	56	52	71	5?	5 ₹	5.2	۶ ر	53	53	61	6?	Ó'n	10	56	21	53	55	57
25 0	1 ر	20	51	5.0	53	50	52	٠, ٤	23	55	೬೮	ə 2	0.3	5.6	69	67	63	62	€ 1
715	5.1	5 ¢	49	→ 7	40		46	47	+9	51	55	56	57	52	u 1	5.0	56	55	60
406	51	5 (:	40	47	43	→ 3	44	43	+4	49	2.5	53	5₹	57	5.5	52	5.1	52	61
2 i B	- 3	53	50	50	25	5.3	49	4.0	45	49	52	5 C	5?	55	= 0	51	52	53	58
630	5 1	25	4 9	40	54	413	٠,	47	45		F 1	50	5)	55	51	50	5.3	54	£ 7
170	> 1	92 86	4 2	47	51	***	a	4.5 4.0	٠.5	3 0	50 49	51 30	51	55 56	51 52	52 52	52 53	53 53	55
1336	. J		46	4.8	53	43	46		46	+8	69	-	52 51	2.5		57	53	53	5 1
1250 1610	94	ģu ņo	43 41.	4 E	57 47	43	++ ÷	65 43	+5	4 P 4 7	7.6	5? 5?	51	بر به	55 55	27 23	49	40	5 (
2000	•• •	ي د	4.5		45		4.5	→ 1	44	4 €	47	50.	51	54	50	9.5 47	47	48	40
2500 2500	6 b) .	404	4 C	→ ?	43	4.5	43	4 1 5 1	+3 +1		46	90,	+3 +3	20	45	41 4E	45	46	46
315 T	4 1 5 4	39	4 L	3.5	34	37		34	→1 →3	44 45	-3	4 €	47	⇒ 0 • 7	44	45	45	45	47
4410	37	74	37	3.^ 1?	37	1.5	27	37	+3 +3	45	43	44	47	35	44	41	44	43	
2110	37	37	31	32	27	37	37	1 v	+ 3 + 4	45	+0	42	41	43	4.3	44	43	4.7	44
5 3 d u	37	31	36	3 t.	36	34	36	3₺	7.7	43	70	40	3.3	4.2	41	42	41	41	42
1316	رو	34	3 t	3.5	30	3-	3.0	غد	41	4.2	3 8	35	11	41	40	•1	63	41	41
13330	31	12	13	32	3.4	32	3.2	33	33	38	35	36	3	37	37	3.8	3€	19	4.
		_			. •		3.				• • •	/ •	•		, .	• •	•		
OVERALL	o d	69	2.7	તે ક	5 }	e n	51	93	14	95	96	3 6	95	37	46	37	96	37	0

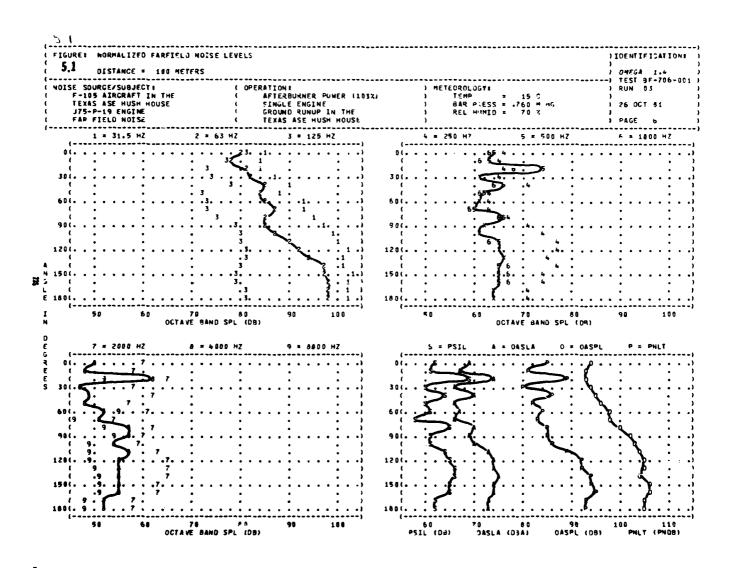
LETTEL CONFECTED IN KIMBYE FACKGECUNGZELESTRONIO NOIDS.

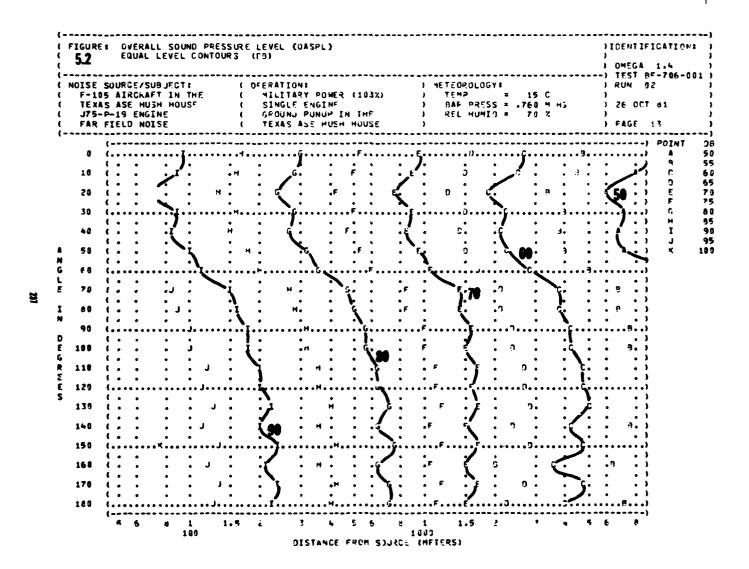
CISTANCE = 100 METERS 0 UMFGA 1.4 INCISE SOURGE/SUBJECT:		EASURED /3 OCTAV			SURE	LFVEL	(69)										11	CLENTI	FICAT	IONE
	• /			-	r ERS										. -		-	-	• • •	
F-185 AIRCRAFT IN THE	ISF SOUR	SE/SUBJE	CTA		4 0	FERATIO	-12											•		7-02
FRE FIELD NOISE			-		į -	AFTE 3	JANE	. Pow	F# (1	3 3%)					26 0		j	• • • • • • • • • • • • • • • • • • • •	•	
FREQ (HZ)	TEXAS AS					SINGLE	FNG	I NE)	BAF	PRESS	± .7	748 M	45	,	26 00	T 81	
FREQ (MZ)		ENGINE			(GRUUND			–)	PEL	HUMID	=	69 %		1			
12.5	FAR FIEL	3 NOISE			(TEXAS	ASE	4054	HOUSE)						,	PAGF	7	
12.5	FREG								Α.	NGLE	(DEGR	EFS)					••••			
16 84 84 89 87 88 88 89 97 90 92 95 95 97 97 45 47 45 46 69 98 95 28 80 83 85 30 93 93 93 94 36 96 97 37 97 130 96 98 98 98 25 81 79 82 83 86 86 91 90 44 45 37 97 97 97 36 30 36 86 91 90 44 45 37 97 97 97 36 30 36 86 91 90 44 45 37 97 97 97 36 30 46 82 86 88 89 42 94 95 44 36 46 46 98 98 37 48 79 76 76 61 63 89 69 69 69 69 69 69 69 69 69 69 69 69 69		3	10	20	30	40	50	69		_			110	121	150	140	150	140	170	188
16 84 84 89 87 88 88 89 97 90 92 95 95 97 97 45 47 45 46 69 98 95 28 80 83 85 30 93 93 93 94 36 96 97 37 97 130 96 98 98 98 25 81 79 82 83 86 86 91 90 44 45 37 97 97 97 36 30 36 86 91 90 44 45 37 97 97 97 36 30 36 86 91 90 44 45 37 97 97 97 36 30 46 82 86 88 89 42 94 95 44 36 46 46 98 98 37 48 79 76 76 61 63 89 69 69 69 69 69 69 69 69 69 69 69 69 69	12.5	44	91	36	56	33	•1	h 9		32	91	42	45	9.5	95	92	46	94	96	94
25 81 79 82 83 86 86 91 90 94 95 97 97 97 96 96 97 97 97 97 97 97 97 97 97 97 97 97 97					• • •						95						• •		75	9
31.5 81 79 75 80 84 62 86 87 39 72 34 95 94 36 46 46 96 97 97 40 77 76 75 60 86 83 82 84 85 97 87 87 87 87 87 87 87 87 87 87 87 87 87	2.0	e b	83	91	90	99	9.1	98	94	35	96	97	3 6	97	130	96	98	94	90	9
40 79 76 76 61 63 80 65 62 84 65 32 84 65 32 81 64 37 31 93 36 36 36 36 36 36 36 32 84 65 32 81 64 37 31 93 36 36 36 36 36 36 36 36 36 36 36 36 36 36 36 36 36 36 36 37 <td< td=""><td>25</td><td>41</td><td>79</td><td>62</td><td>63</td><td>øė</td><td>10</td><td>91</td><td>93</td><td>34</td><td>45</td><td>37</td><td>97</td><td>97</td><td>46</td><td>ot</td><td>47</td><td>97</td><td>37</td><td>ė,</td></td<>	25	41	79	62	63	øė	10	91	93	34	45	37	97	97	46	ot	47	97	37	ė,
50 76 75 80 80 83 82 84 65 87 81 64 37 31 93 36 35 96 96 96 96 96 97 97 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>6 P.</td><td></td><td></td><td></td><td></td><td>•</td><td></td><td>30</td><td></td><td></td><td></td><td>91</td></t<>									6 P.					•		30				91
63 75 74 72 77 80 76 76 81 80 81 00 82 05 92 97 97 97 88 71 70 71 76 70 70 73 74 76 79 32 82 31 31 79 34 75 77 100 73 72 09 71 76 00 70 70 73 74 76 77 78 74 79 77 76 70 79 125 70 73 70 69 72 64 70 69 70 73 74 75 75 75 75 73 74 77 16 00 70 70 70 69 72 64 70 69 70 73 74 75 75 75 75 75 75 74 77 78 74 79 71 69 65 00 65 00 69 60 00 60 60 60 60 60 60 60 60 60 60 60						• -				•								, • ·	•	91
88 73 71 70 71 76 70 73 74 76 79 32 32 31 31 31 79 34 65 97 100 73 77 72 09 71 76 00 70 70 73 76 77 78 74 79 77 76 76 79 79 125 70 73 70 69 72 68 70 69 70 73 74 75 70 77 78 74 79 77 76 76 79 79 100 70 70 70 70 70 70 70 70 70 70 70 70 7		. •	. •						•	-			-		• •				•	96
188 73 72 09 71 76 08 74 70 73 76 77 78 74 79 77 76 76 79 125 70 73 70 69 72 68 70 69 70 73 70 70 75 70 75 75 78 74 77 160 70 73 70 69 65 64 68 64 64 65 67 70 72 72 72 72 71 72 67 68 67 250 60 60 61 50 50 50 50 50 50 50 50 50 50 50 50 50	-																	•		9
125 70 73 70 69 72 63 70 69 70 73 74 75 75 75 75 74 77 160 73 69 65 bu 68 bu 68 bu 68 bu 63 67 70 72 72 72 71 71 72 69 71 69 65 bu 68 bu 68 bu 68 bu 68 bu 68 70 72 72 72 71 71 72 69 71 69 69 50 bu 68 bu 68 50 50 50 00 00 bu 58 50 59 50 50 00 00 bu 58 50 59 50 50 50 50 50 50 50 50 50 50 50 50 50										_							• •			70
160 73 69 65 bb 68 64 b4 b4 b3 65 70 72 72 71 71 72 50 71 69 200 b2 61 64 b3 62 60 b0 64 b3 65 70 72 72 71 71 72 67 66 67 250 b0 b0 b1 50 68 58 50 59 50 50 50 50 60 67 65 62 65 65 65 60 60 67 65 62 60 60 51 50 50 55 54 54 b2 67 62 65 65 65 65 65 66 66 67 65 62 60 60 67 65 62 60 60 67 65 62 60 60 67 65 62 60 60 67 65 62 60 60 60 67 65 62 60 60 60 67 65 62 60 60 60 67 65 62 60 60 60 60 67 65 62 60 60 60 60 60 60 60 60 60 60 60 60 60		•		• •							•		•						•	7
200 b2 61 64 b3 62 60 u0 50 a3 56 71 74 72 71 72 67 66 67 250 50 b0 b1 50 65 58 50 59 b2 b4 70 78 71 72 75 72 72 56 46 315 60 59 56 55 65 55 58 58 50 57 62 62 65 65 65 66 66 67 65 62 66 60 59 57 68 55 65 58 58 50 55 58 58 58 63 67 62 62 62 62 62 62 62 62 62 62 62 63 60 60 60 67 65 62 63 63 63 63 63 63 63 63 63 63 63 63 63							-		• •						•					
250 50 00 01 50 65 55 50 50 50 02 04 70 77 77 72 75 72 72 06 315 60 50 50 50 55 50 50 50 50 50 50 50 50 50							-	- :		-	. •						-			4
400 5 3 57 6 6 55 6 1 5 4 5 4 7 6 6 6 5 7 5 6 5 5 6 6 6 6 6 6 6 6 6 6			D 0	-						-		70	7.1		-	_		* 2	-	€ €
500 59 56 59 57 63 59 57 56 52 56 55 59 61 51 60 60 60 59 600 60 59 600 57 57 63 54 60 55 57 55 57 55 57 56 57 50 60 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 60 59 60 50 50 50 50 50 50 50 50 50 50 50 50 50	315	6.9	50	58	55	65	55	54	54	52	6?	6.2	65	6,	96	0.6	67	65	52	6.
630 57 50 69 55 57 57 50 55 57 55 57 56 57 53 60 60 60 50 59 800 57 57 58 56 57 53 60 60 60 50 59 1000 58 56 62 55 58 56 56 54 60 57 56 57 60 60 57 60 60 60 60 59 1250 58 57 60 57 58 57 60 57 58 57 60 60 57 58 57 60 60 57 58 57 60 60 57 58 57 60 60 57 58 57 60 60 57 58 58 59 50 58 50 60 60 60 60 60 60 60 60 60 60 60 60 60	400	5.4	57	EB	59	61	54	6.4	57	oi	58	>8	63	67	52	62	ó ŝ	59	6.7	€.
800 \$7 \$7 \$63 \$4 \$60 \$55 \$7 \$55 \$62 \$7 \$6 \$7 \$7 \$60 \$00 \$00 \$60 \$7 \$7 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1			36	• -	-		53	• •		52					51	•	o i	€ i		5
1000 58 5E 62 55 58 56 56 54 60 57 5E 57 6J 50 51 61 59 1250 58 57 64 57 58 57 58 57 58 57 58 58 58 59 51 61 51 51 51 51 51 51 51 51 51 51 51 51 51						•		-		•		-		•						•
1250		•																		F 9
1688 56 55 52 54 60 55 59 50 58 50 58 50 62 62 68 61 61 57 2888 55 54 66 53 55 55 55 55 57 59 50 58 50 62 62 62 68 61 61 57 2588 49 40 55 49 50 40 51 47 54 53 52 59 57 54 52 52 52 59 57 54 52 52 52 59 49 3150 46 43 60 43 44 44 48 47 53 53 53 59 54 52 51 51 50 51 48 4888 49 44 42 52 42 44 42 45 46 51 52 49 52 43 49 51 50 50 47 5000 43 42 47 42 42 41 47 49 51 52 49 52 43 49 51 50 50 47 5000 42 41 47 41 41 41 40 43 43 51 47 47 47 47 48 48 48 5000 40 40 40 40 40 40 59 39 39 53 42 49 50 45 46 46 46 46																				
2800 55 54 66 57 55 52 55 50 59 54 55 59 60 60 68 55 56 52 2580 49 40 55 49 50 40 51 47 53 52 59 57 54 52 52 52 49 3150 46 43 60 43 44 44 48 47 53 53 52 59 57 54 52 52 52 49 4000 44 42 52 47 44 42 45 45 46 51 52 49 52 43 49 51 50 50 47 5000 43 42 47 42 42 41 47 42 43 43 43 51 52 48 49 44 46 49 49 46 5300 42 41 47 41 41 41 40 43 43 51 47 47 47 47 47 47 48 44 6000 40 40 40 40 40 40 39 39 39 53 42 49 50 45 46 46 45 47 47 47 48 44		•		_						_					_		-			F (
2580 49 40 55 49 50 40 51 47 54 53 52 55 57 54 52 52 49 3150 46 43 60 43 44 44 48 47 53 53 52 55 57 54 52 52 49 46 48 47 53 53 49 54 52 51 51 50 51 48 4808 44 42 52 42 44 42 45 45 46 51 52 49 52 43 49 51 50 50 47 5000 43 42 47 42 42 41 47 45 45 45 51 52 48 49 45 46 49 49 46 5300 42 41 47 41 41 41 40 43 49 51 47 47 47 47 47 48 44 5000 40 40 40 40 40 40 39 39 39 53 42 49 50 45 46 46 46 44							-		• •	•	-	••				-			•	5:
3150 46 43 60 43 44 44 48 47 53 53 49 54 52 51 51 50 51 48 4808 44 42 52 42 44 42 45 46 51 52 49 52 43 49 51 50 50 47 5000 43 42 47 42 42 41 47 45 51 52 48 49 43 44 46 49 49 46 5300 42 41 47 41 41 41 46 43 49 51 47 47 47 47 48 44 6000 40 40 40 40 40 40 39 39 53 42 49 50 45 46 46 46 47 47 47 48 44								•			-				-	•			_	
4800 44 42 52 42 44 42 45 46 51 52 49 52 43 49 51 50 50 47 5000 43 42 47 42 42 41 47 40 51 52 48 49 43 44 46 49 49 46 6300 42 41 47 41 41 40 43 49 51 47 47 47 47 47 46 48 44 6000 40 40 40 48 60 39 39 53 42 49 50 45 46 45 46 46 44														•						4/
5000 43 42 47 62 42 41 47 45 51 52 48 49 43 48 48 49 49 46 5300 42 41 47 41 41 46 43 49 51 47 47 47 47 48 48 44 5000 40 40 40 40 40 39 39 53 42 49 50 45 46 45 47 47 47 48 44																				4
5300 42 41 47 41 41 40 43 49 51 47 47 47 47 48 49 44 5080 40 40 40 48 60 39 39 53 42 49 50 45 46 45 47 47 48 44										_										46
							_								47	-		-		41
10000 38 37 51 35 37 37 52 41 45 47 43 47 48 45 45 45 46 42		_							42			45			47	47	47	48	44	44
	10000	38	37	51	36	37	37	52	41	45	47	43	4.1	4 3	44	45	45	46	42	4.2
OVERALL 94 93 93 94 95 96 98 58 140 102 103 104 105 105 104 106 106 105																				

LEVEL COPPECTED TO REMOVE PACKGROUND/FLECTRONIC NOISE.

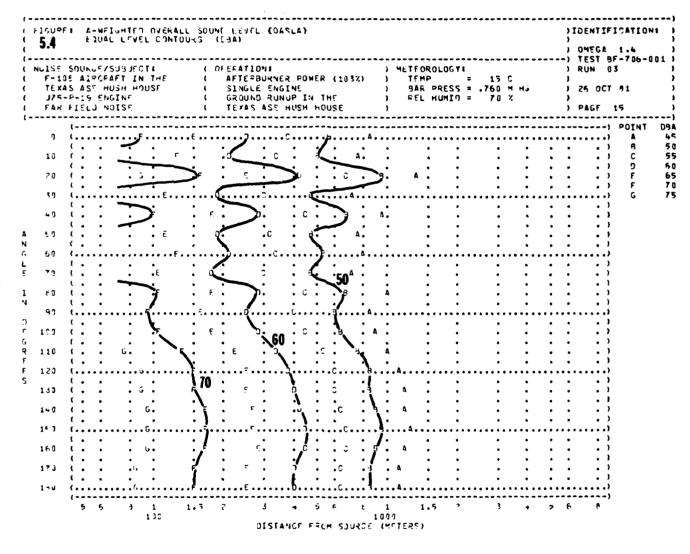




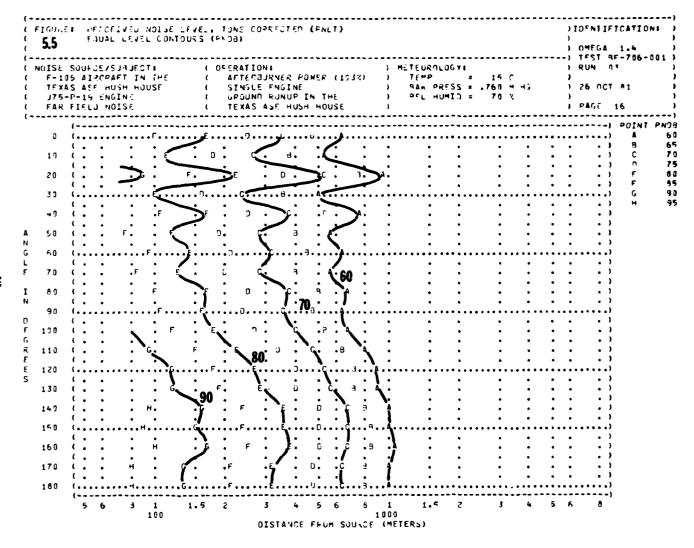


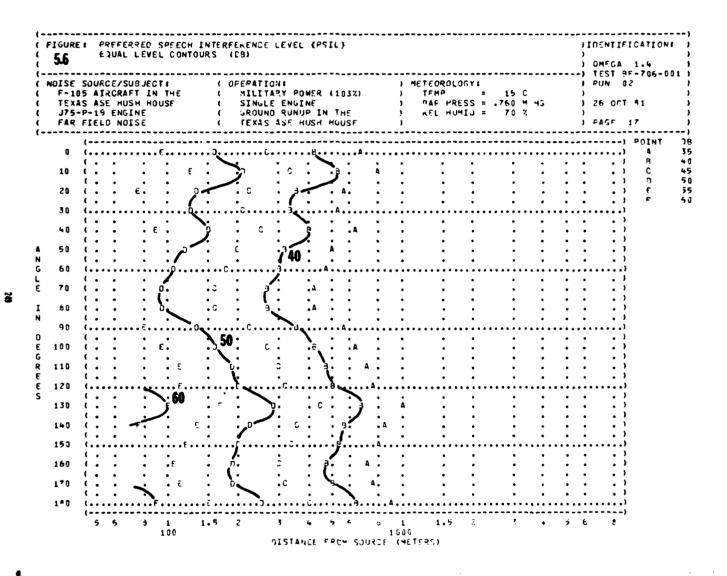


à



à





¥

걸

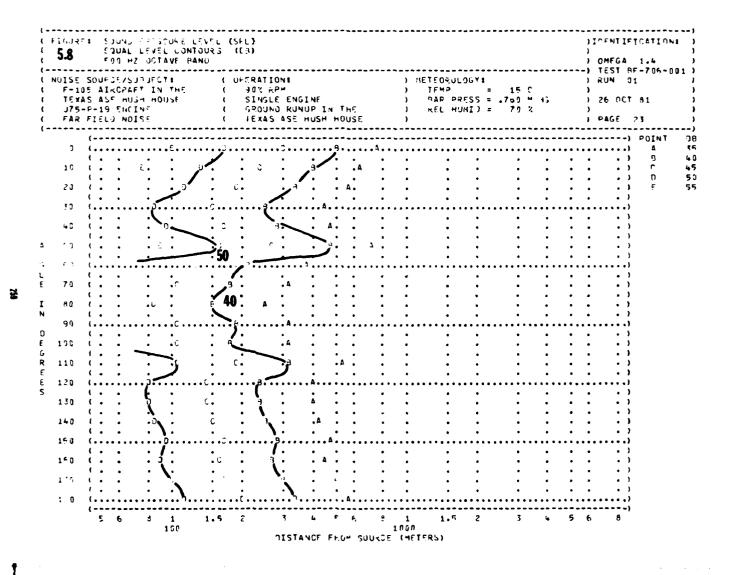
(FIGURE: MAXIMUM PERMISSIBLE FIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) (57 FOUAL TIME CONTOURS (MINUTES)) I DENTIFICATION: 5.7 OMEGA 1.4 TEST BF-706-001 NOISE SOURCE/SUBJECT! (OFERATIONS) METEOROLOGYA RUN 32 F-105 ATROPART IN THE TEXAS ASE MUSH HOUSE 15 C TEMP = 15 C BAR PRESS = .760 M H3 REL HUMID = 70 % MILITARY POHER (103%) SINGLE ENGINE) 26 OCT 81 J75-P-19 ENGINE GROUND RUNUP IN THE FAR FIELD NOISE TEXAS ASE HUSH HOUSE PAGE 7 9 < 18< 29 < ₹0 < 414 PEPSONNEL MAY BE EXPUSED UP TO 968 MINUTES PER DAY AT ALL DISIANCES FROM SOURCE EQUAL TO OR GREATER THAN 50 < 75 METERS 66< FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT) E UNCER THE FOLLOWING EAR PROTECTION CONDITIONS: 794 Ħ 80 < NO PROTECTION MINIMUM OPL SAR MUFFS 90 < 100 < AMERICAN OPTICAL 1700 EAR HUFFS V-514 EAR PLUGS 110< 120 < COMFIL TRIPLE FLANGE EAR PLUGS H-133 GROUND COMMUNICATION UNIT 130 < 147< 1504 1604 170 < 190 < 1.5 2 1.5 2 + 56 DISTANCE FROM SOURCE (METERS)

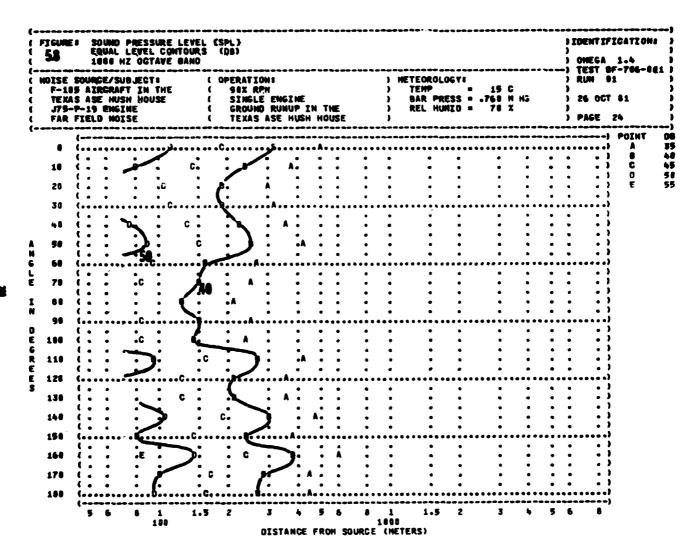
F-105 AIR TEXAS ASE J75-P-19 FAR FIE J	E/SUBJECT 1 GRAFT IN THE HUSH HOUSE ENGINE NOISE	(OFERATION: (AFTELPURNER 1 SINGLE ENGI (GROUND RUNL (TEXA SEE H	POWER (193%) NE Poin the USH House	HETEORO TEMP BAR (0L0GY: = 19 PRESS = .76 HUMIU = 7	5 C 0 H 45) OMFGA 1.4) TEST RF-706-) RUM 03) 1 25 OCT d1)) FAGF 7
0< (********		}
10< ())
28< (3
30< (3
40< (PEFSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY						3
<pre>< (</pre>	AT ALL DISTANCES FROM SOURCE EQUAL TO OF GREATER THAN - 78 METERS) }
(ED< (FOR ALL ANGLES EVALUATED (ANDICATED BY « AT LEFT))
70< (UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:						; ;
0< (NU PROTECTION						;
98< (MINIMUM CPL EAR MUFFS						,
.00<	AMERICAN OPTICAL 1706 EAP MUFFS						3
.10 < (V-519 EAR PLUGS						}
28<	CONFIT TRIPLE FLANGE EAR PLUGS						,
30<	H-1	33 GRCUNJ COMMUNI	CATION UNIT				3
40<							į
50<							į
.60<							(
.70< {							į
.80< (j

Z

걿

è





75.7

>

ž

5 4 5 5 6 1 1 1000 DISTAUGE FACH SOURCE (MSTERS)

100

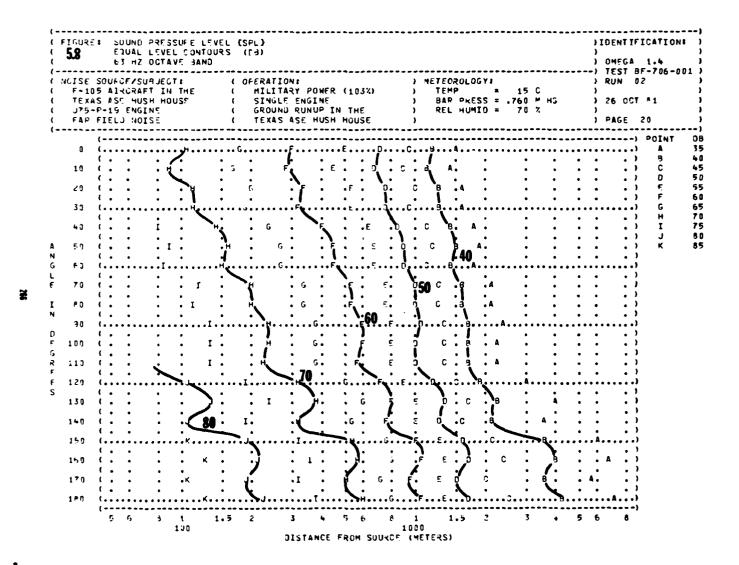
5

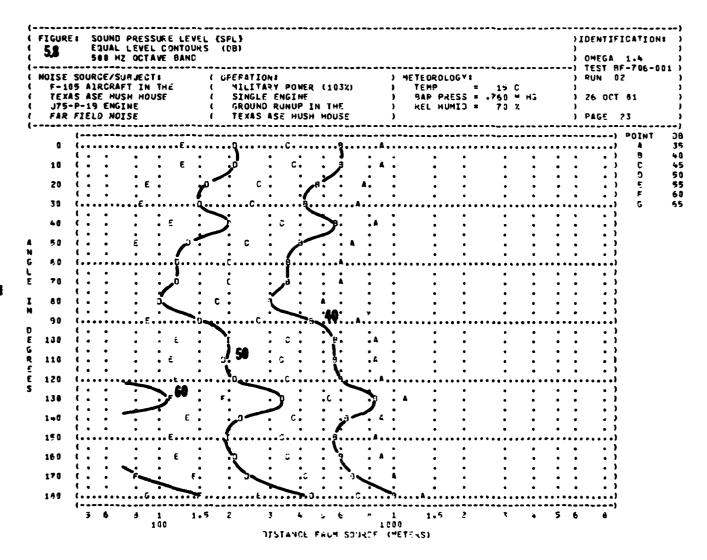
1.5

5 •

3

) IDENTIFICATION:





DISTANCE FROM SOURCE (METERS)

METEOROLOGY:

1.5 2

1000

¥ 5 €

JICENTIFICATION: OMFGA 1.4 TEST 95-706-001

OCT 51

RUN 02

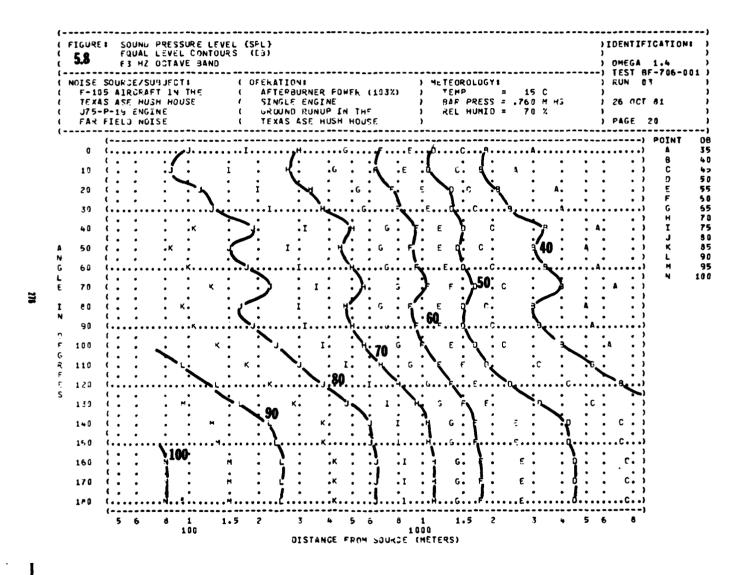
21

5 6 1 100

1.5 5

FIGURE: SUUND PHESSONE ESVEL (SEL)
EQUAL LEVEL CONTOURS (FL)
2000 HZ DOTAVE BAND

DEERATIONE



5 4

DISTANCE FROM SOURCE (METERS)

٤

1030

1.5 2

) IDENTIFICATION:

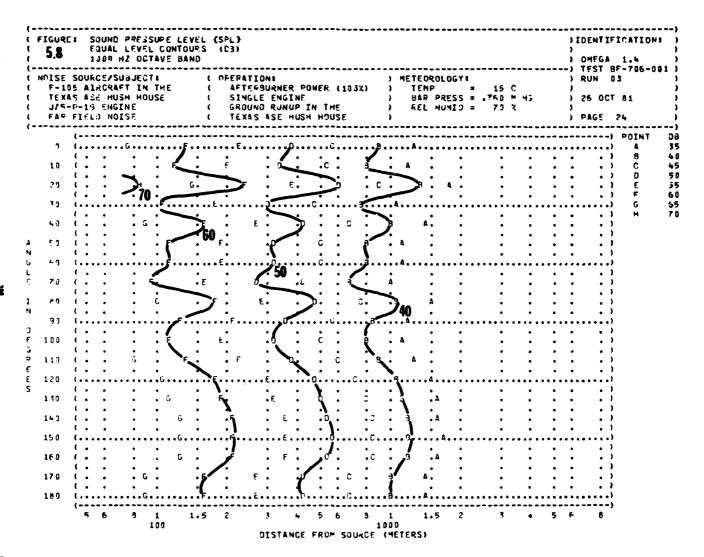
FIGURE: SOUND PRESSURE LEVEL (SFL)
EQUAL LEVEL CONTOURS (DB)
125 MZ OCTAVE BAND

1.5

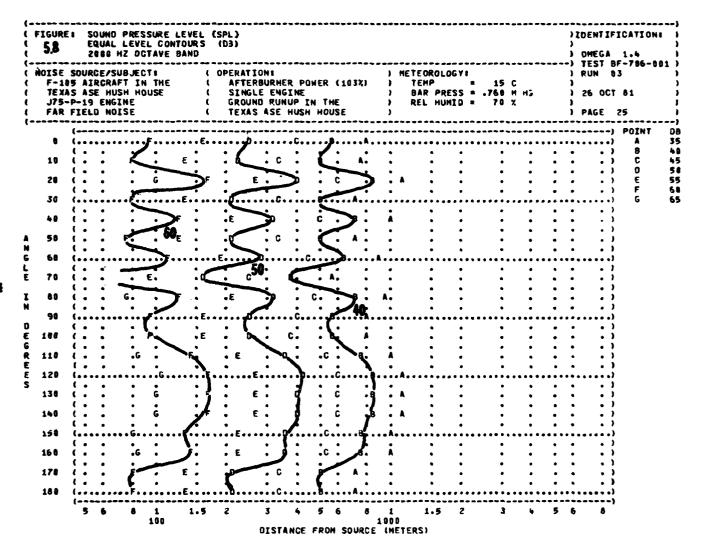
100

î

-



ì



Ħ

TABLE 6.1

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS
F-106 AIRCRAFT IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP
KELLY AFB TEXAS, TEST #BF-707-001

Aircraft Engine Operation	S	ingle Engine
85%	85 3100 375 1.31	
95%	95% 6000 483 1.65	EGT
Military Power	100 9000 610 1.99	
Afterburner Power	100 9000+ 608 1.99	
Meteorology		
Temperature Bar Pressure Rel Humidity Wind - Speed - Direction	30 .744 59 Calm	C M Hg %

AD-7/118		AIR FORCE AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTETC F/G 20/1 USAF BIOENVIROMMENTAL NOISE DATA HANDROOK. VOLUME 172. HUSH-HOUETC(LAMRL-TR-75-50-VOL-172														
UNCLASSI	FIED	AMRL-TR	-75-50	-VOL-17	2	. DONES										
40.9																
_				<u> </u>												

6.2 1/3 DEST	URED S OCTAVE ANCE =	BAND 100	METE	RS)	DHEGA		
OISE SOURCE/ F-106 AIRCR	SUBJEC AFT IN	T:		(OPE	RATIO	 N: M			~) HE	TEOR	DLOGY	: :	50 C) !	RUN	8F-701 01	7-00
OISE SOURCE/ F-106 AIRCR TEXAS ASE H J75-P-17 EN FAR FIELD N	USH HO IGINE IOISE	USE		(5	INGLE ROUND	ENGI RUNU ASE H	NE IP IN IUSH H	THE) }	BAR F	PRESS HUMID	= .74	54 X	HS) ;	26 OC1	7 81	
			*																
FREQ (HZ)	8	10	20	30	40	50	60	70 70	GLE (110	120	130	140	150	160	170	180
12.5 16	73< 69<	73 <	704		72< 69<			72<	70.		74<	74.4		73< 76<		72< 75<	72<	72< 75<	73
20	034	634	704	164	934	234	641	124		74<	76<		77<			714	75<	_	74
25										69<	724					724	734		72
31.5												• -	67<	67<		70<	784	69<	71
40																	68 <		67
50								62<					69<				65<	63<	65
63							71<	71<					66<				•••		
80 100														70<		67.	68 <	70<	
125													634	65<		9/5	90 4	65<	
160													0,1	0,1				64<	
200																63<	68<		58
250													55<	54<	55<	60<	58<	61<	55
315													53<	50<	66<	63	63	62	64
48 0									45<				55	49<	51<	55	54<	57	54
500	46<	47 <	46<		45 <	43<		46<			48<		51<	49<	50<	54	52	53	50
630	44<	45 <	48<	42<				43<			50<	50<	58<	50<	49<	53<	52<	51<	47
500 1000	43<	44 < 45 <	46< 47<	42<	42 < 54		43<	42< 50<	50 < +6 <	44<	45< 53	46< 51	47<	50<	46<	52 52	51 < 52	58<	47
1250	44<	45 <	46<	464	29 47 <	624	39<	44<	46 <	39<	49<	47<	48<	48<	43<	50	50	49	-7
1600	53	51	50	47	47	43<	41<	44<	45 <	41<	52	47	48	48	43<	3 د	52	51	- 6
2000	51	52	51	48	47	444	424	444	42<	414	51	47	47	47	41<	50	48	50	45
2500	39<	44	44	40<	44	38<	37<	40<	44	37<	49	46	44	44	48<	48	47	47	44
3150	36<	43	39<	364	40<	36 <	35<	38<	46	36<	45	45	42	42	37<	47	47	46	43
4060	33<	35 <	33<	32<	32<	34<	31<	35 <	45	31<		35 <	39	36<		43	42	42	39
5000	36<	36 <	33<	31<	30<	31<	29<	35<	39	38<	38<	32<	37 <		33<	43	41	42	48
6308	35<	35 <	33<	31<	31 <	38<	29 <	30<	33 <		27<		34<	30<		40	38	38	35
8080	33< 31<	34 < 31 <	33<	38< 29<	33<	31< 30<	35<	30< 27<	31 < 30 <	29<		30< 30<	33< 30<	28<	29<	39	37 < 31 <	41 33<	34 34
10000	2 T.	27 4	384	CAC	32<	204	28<	614	284	C.A.		284	384			35<	274	334	3

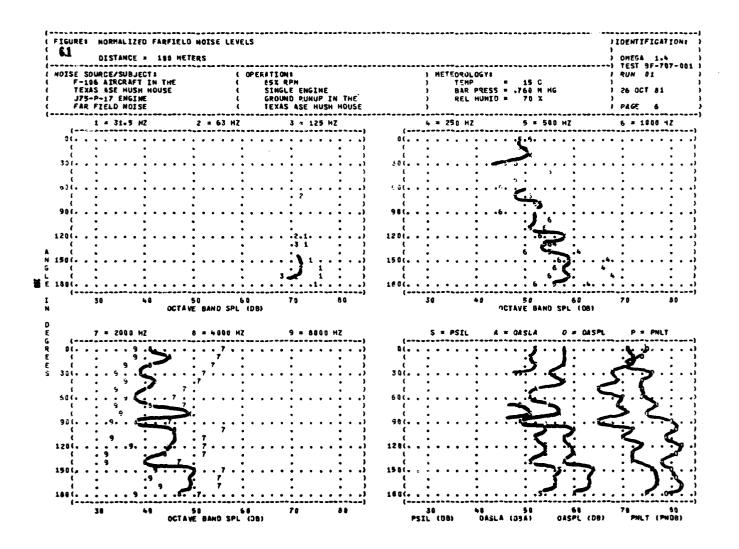
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

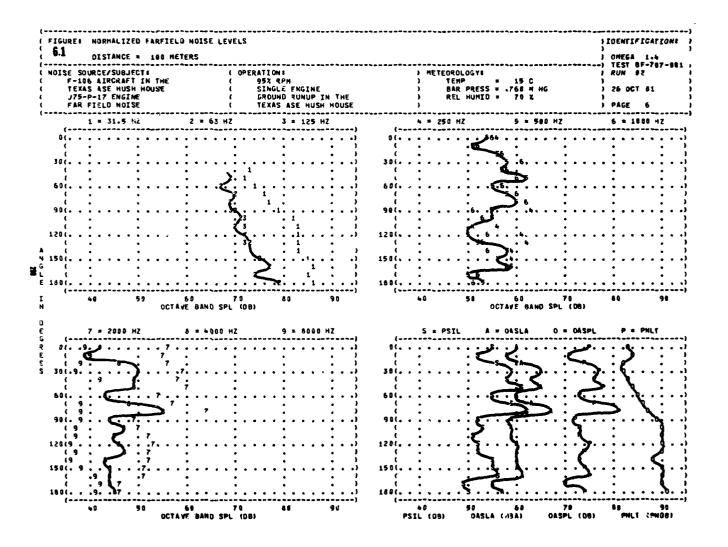
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOTSE.

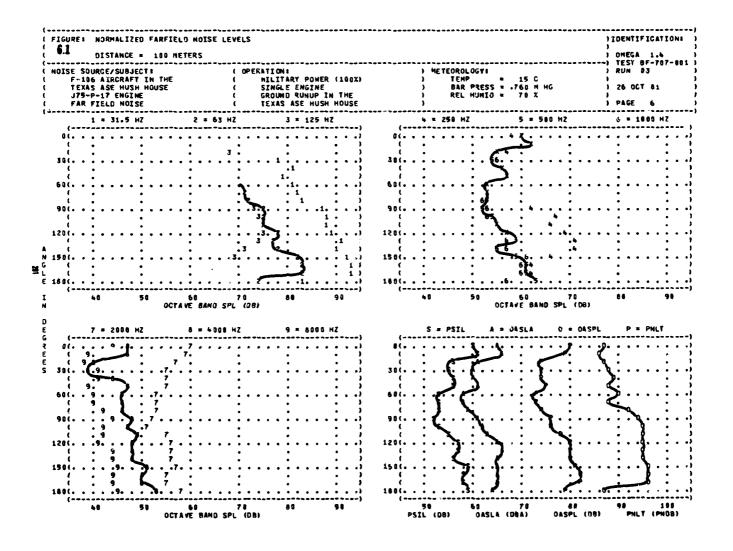
6.2	MEASURED : 1/3 OCTAVI DISTANCE :	F BANC)		LEVEL	(D8))	DENTI OMEGA TEST	1.4	
F-106 A	RCE/SUBJE IRCRAFT II SE HUSH H	N THE		(OF	ERATIO HILITA SINGLE	RY PO	_	(100%)) ME	TEMP	OLOGY: PRESS		30 C	ue.	•	RUN 26 OC	03	
J75-P-1	7 ENGINE LD NOISE	0035		i	GROUND TEXAS	RUNU	PIN	_		;		HUMID		59 %	73)	PAGE	2	
FREQ								AN	GLE (DEGRE	EES)								
(HZ)	0	10	20	30	40	50	60	76	60	98	100	110	120	130	140	150	160	170	180
12.5	84	83	82<	82	. 84	82<	83	76<	86	88	88	90	83	87	85	87	84	84	74
16	83	81	82	84	84	81	63	82	47	88	91	89	85	88	89	90	88	88	82
20	79<		80<	79		63	86	84	87	89	ءَ ۾	89	88	89	87	89	89	89	77
25	69<		724	75	79	77<	80	80	61	85	86	86	86	88	87	8.5	69	89	79
31.5	;			69.	73<	71<	72<	73<	75 <	79	82	82	84	86	84	87	89	89	71
40		68 <		72	74<	69<	72<	71<	71<	75<	77<	79	82	80	83	85	87	87	78
50	64<	64 <	66<	66	65<	67<	68<	69<	70<	73<	72<	73<	76	76	77	82	82	82	74
63								67<	66 <	70<	71<	72<	73<	78<	70<	72	75	75	64
8 0																			
100			67<							71<	71<	73<	73<	72<	67<	67<			
125	64<		62<	624	ž.		62<		54<	66<	69<	69<	69<	69<	66<	64<	65<	65<	
16 D												64<	65<	64<	65<				
28 0		57 <								594	56<	62<	65<	68	66<	60<		•	
25 0	56<		56<		55 <					56<	68<		66	68	68	64<			
315	5 2<	56 <	51<			50<	50<		⇒ 0 <	52<	53<		57<	59<	59<	55<		55<	52
400	53<	55	48<	46		49<	49<	49<	48<	48<	51<		53<	56	50<	51<		55	57
500	56	57	52	51		52	48<	48<	48 <	46<	48<		53	54	48<	54	57	57	56
630	55	59	50<	504		54	48<	48<	48 <	47<	49<		52<	53<	50<	55	56	56	56
800	53	59	48<	484		52	50<	50<	49<	48 <	47<		53	52	50<	54	54	54	53
1000	54	>6	49<	49		51	45<	45<	45 <	47<	49<		52	51	51	55	54	54	46
1250	57	55	52	52	52	52	47<	47<	47 <	49<	48<		52	52	53	57	56	56	54
1600	59	56	55	53	53	53	51	51	51	49	47	51	52	53	54	55	52	52	54
2000	52	53	50	49	48	47	46	46	46	46	46	50	51	52	49	50	48	48	51
2500 3150	45 44	48 46	44 35<	43 34	44 : 37 <	45 43	42 42	42 42	41 <	43 43	44	47 45	49 45	47 44	45 44	47 47	46 46	46 46	53 51
		37 <	34<	34			40		42		-				-		44	44	91
4000 5000	41 41	37 <	36<	344		41 40	41	40 41	40 41	42 43	41 41	43 42	41 40	42 42	43 43	44	44	44	4 1
6380	42	36 <	35<	344		36<	34<	35<	39	4) 41	39	39	39	41	41	42	42	42	42
8000	39	35 <	35<	40	39	34<	39	37 <	39	41	38	38	39<	40	40	41	41	41	39
10000	37<	32 <	32<	324		31<	32<	33<	39 35 <	38	35<	35<	34<	36 <	37<	37<		37 <	41
OVERALL	87	86	86	87	89	87	90	88	92	94	95	95	9+	95	94	96	96	96	87

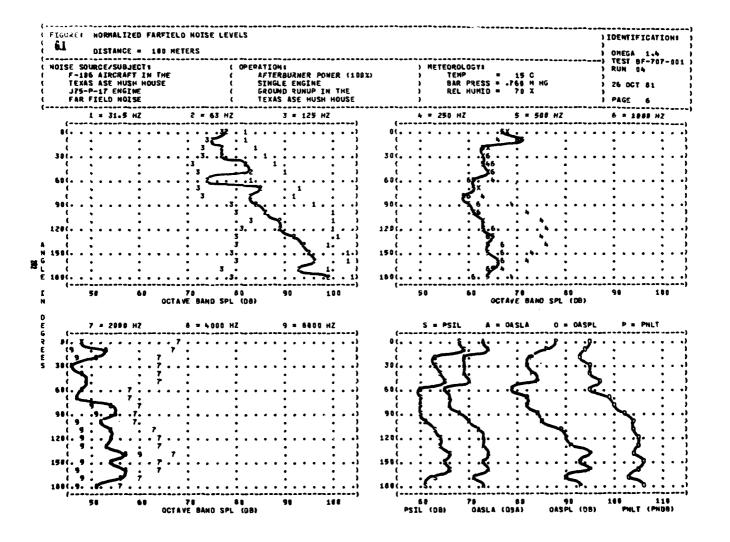
69 1/3	SURED S OCTAVE TANCE =	BAND	1		LEVEL)	DENTI OHEGA TEST	1.4	
OISE SOURCE F-106 AIRC TEXAS ASE J75-P-17 E FAR FIELD	RAFT IN HUSH HO NGINE	THE		(ERATIO AFTERB SINGLE GROUND TEXAS	URNER ENGI RUNC	NE IP IN	THE	92)) MI	TEMP BAR	OLDGY PRESS HUNIO	* .7	38 C 44 H 59 X	HG)	RUN 26 OC Page	04 T 81 2	
FREQ								44	IGLE	105691	 FEC1								
(HZ)	0	19	20	30	40	56	60	78	88	98	138	116	128	130	149	150	160	178	188
12.5	92	98	8.8	90	87	89	68	91	90	92	96	94	95	95	94	95	93	94	91
16	89	89	66	91	87	92	88	69	97	95	97	97	97	97	95	97	96	93	95
20	88	86	87	89	90	92	91	95	94	98	98	96	99	98	97	98	97	98	99
25	78<	79	82	84	84	87	79	91	89	94	97	97	97	97	95	98	97	95	91
31.5	77<	72 <	73<	78	81	65	76<	87	88	91	94	93	93	95	93	98	99	94	99
4.0	76<	77 <	76<	79	82	82	8.0	84	83	86	98	32	93	94	95	97	27	94	100
58	75	72 <	76	75	83	82	724	83	81	80	8 Z	87	88	91	93	. 94	94	91	96
63	724	71<	70<	73<		75	70<	77	76	79	79	8.0	61	6 Z	46	88	98	87	97
80	72<				70 <			73<	74<	77<	86<	•••	794			79<	61	79<	
100	73<	70 <	71<	69<		67<		67<	70<	76<	78	80	78	76<		77	78	74<	
125	724	71 <	68<	684		66<		69<	65 <	73<	74	77	76	76	75	73<		71<	
160	684	64 <	63<	644		644			63<	78<	724		744			69<	70<		
200	644	60 <	60<	604		61<	61<	59<	50<	66<	69	71	72	72	71 72	67<	69	65<	
25 0	55<	62 <	61<	59		60<	61<	57<	58<	64<	68	72 66	74 65	72 64	66	71 64	67 64	61< 59<	
315	59<	61	55<	54<	• • •	52<	584	504	524	58<	51 57	50 60	59	64	58	59	62		61
400	59	65	56 58	58	; 53< 59	58	49< 56	48< 56	49∢ 53	55	7/ 55	57	57	59	57	59	61	59	59
500 639	63 63	66 67	58	30 59	57 68	62	59	20 59	57	56	55	56	57	59	68	59	60	61	51
900	61	67	57	57	58	60	51<	57	56	57	57	57	59	58	60	59	59	68	57
1000	61	63	58	57	59	59	56	56	55	56	57	58	60	58	61	61	61	56	56
1250	64	63	61	60	62	61	57	57	55	57	57	59	61	60	63	64	64	59	50
1600	67	65	62	62	62	63	56	56	58	56	56	59	61	61	64	62	61	57	5
2000	59	62	56	57	56	55	51	51	53	53	53	56	53	60	58	56	56	53	51
2580	49	53	51	51	51	50	44	44	49	51	50	53	56	53	61	52	58	51	47
3150	42	51	47	41	44	45	43	43	50	51	48	51	51	50	50	50	51	53	48
4000	41	46	45	40	42	42	42	42	49	49	46	48	46	47	53	48	55	51	46
5006	45	45	45	41	43	42	42	42	48	49	46	46	46	46	50	47	46	48	45
6300	45	44	45	40	41	41	41	39	46	48	44	45	44	45	57	45	43	46	43
8000	44	42	42	42	42	41	42	41	46	46	44	44	4.4	45	58	44	44	+3	43
10800	42	48	39	374	39	38	35<	37 <	43	45	41	41	42	42	50	42	+2	42	4 2
OVERALL	95	94	93	95	94	97	94	96	100	102	104	104	184	104	103	196	195	103	106

< LEVEL CORRECTED TO REHOVE BACKGROUND/ELECTRONIC NOISE.

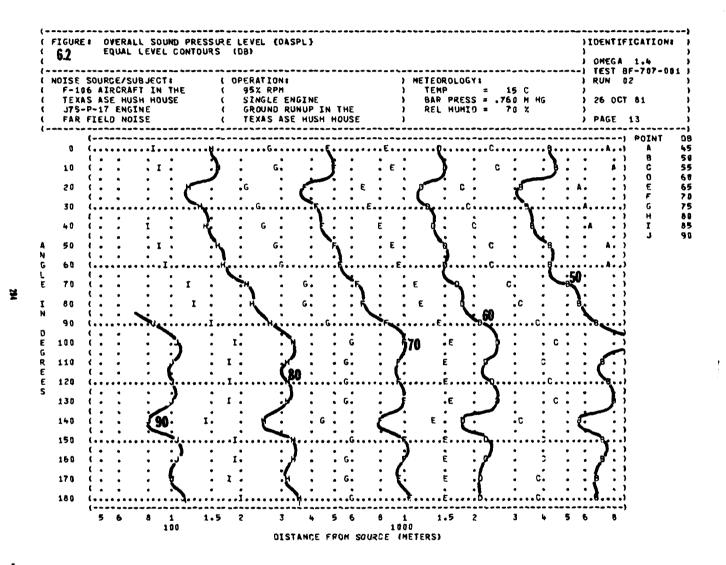






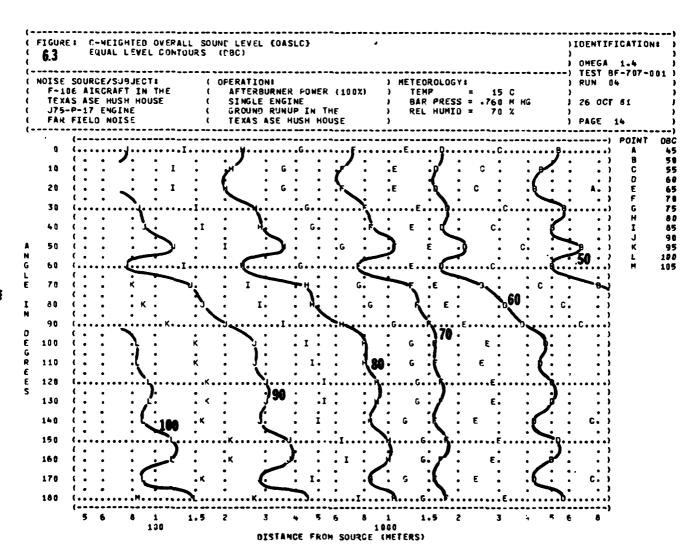


ž



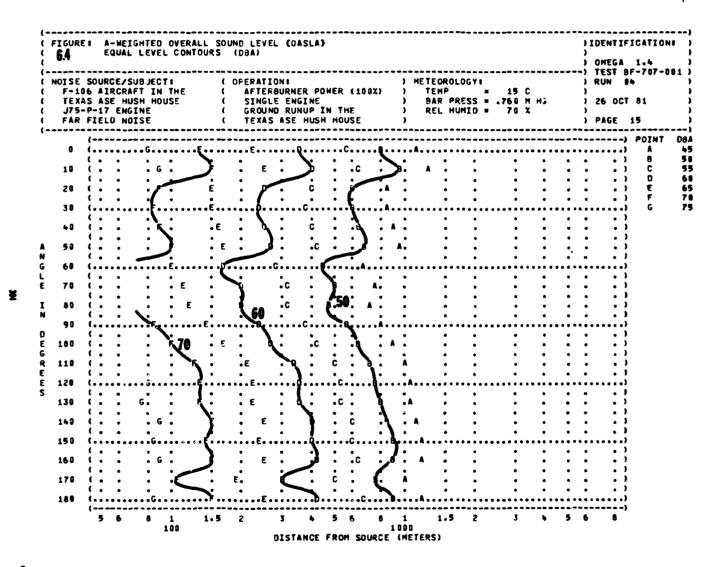
¥

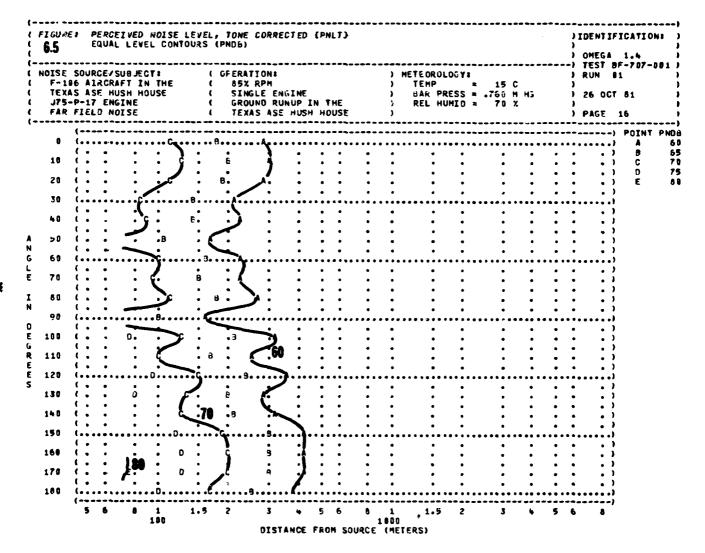
ä

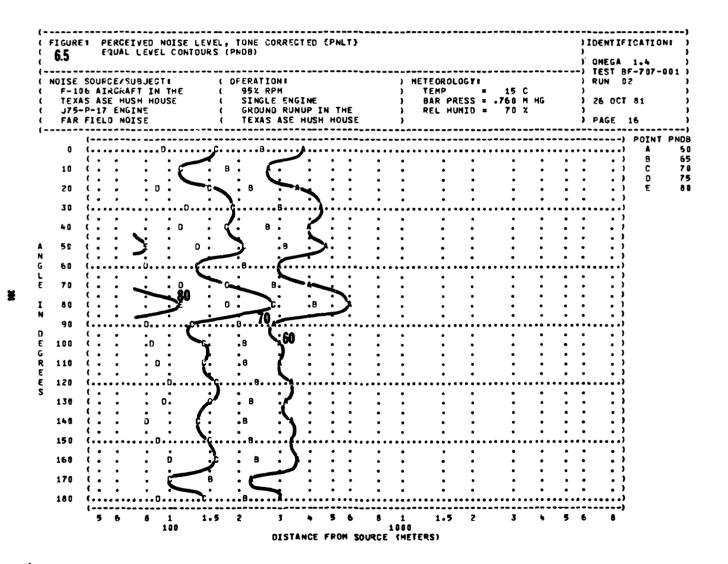


×

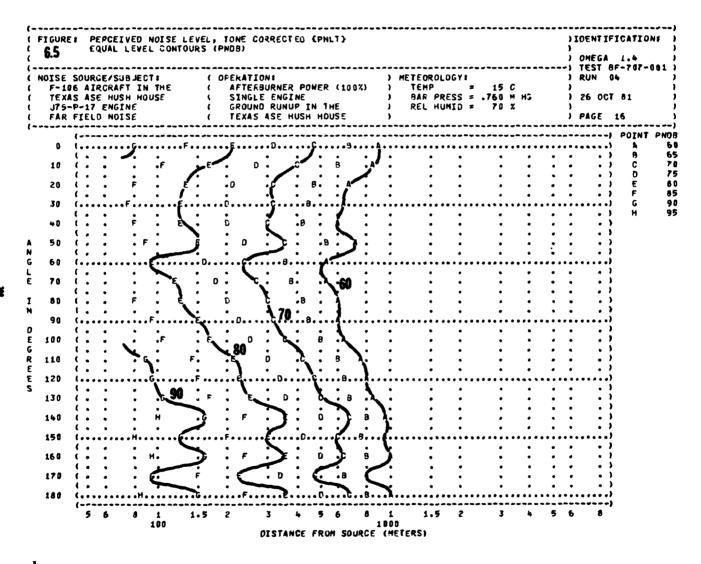
ž



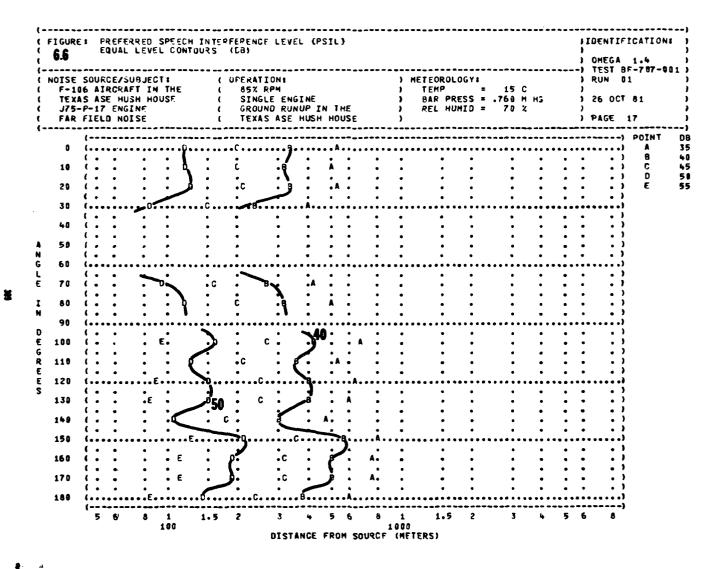




×



....



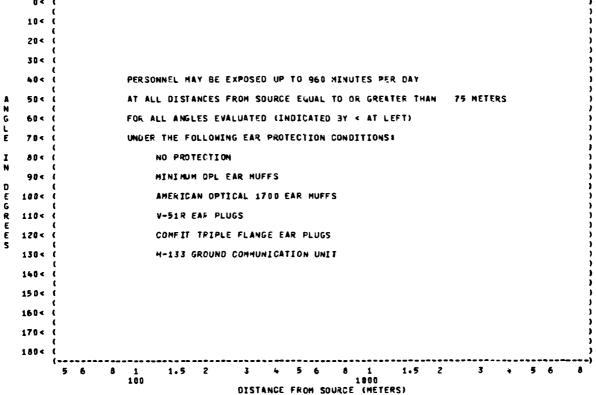
=

	AXIMUM PERHISSIBLE QUAL TIME CONTOURS		E EXPOSURE PER	DAY (AFR 161-35	5, JULY 73))IDENTIFICATIONS)) ONEGA 1.4
	CRAFT IN THE HUSH HOUSE ENGINE	(OFERATION: (85% RPM (SINGLE ENGI: (GROUND RUNU! (TEXAS ASE HI	P IN THE		= 15 C = .760 M H3) TEST BF-707-001) RUN 01)) 26 OCT 81)) PAGE 7
0< (, +4)
10< ()
20< (}
30< (;
40< }	PERSONNEL	MAY BE EXPOSED	UP TO 960 MINU	TES PER DAY		;
50< (AT ALL DI	STANCES FROM SOU	RCE EQUAL TO OF	R GREATER THAN	75 METERS	;
60< (FOR ALL A	NGLES EVALUATED	CINDICATED BY	< AT LEFT)		į
70 < (UNDER THE	FOLLOWING FAR PE	ROTECTION COND	TTIONS		í

NO PROTECTION 90 < (MINIMUM QPL EAR MUFFS 100< AMERICAN OPTICAL 1700 EAR HUFFS 110< V-51R EAR PLUGS COMFIT TRIPLE FLANGE EAR PLUGS 120< H-133 GROUND COMMUNICATION UNIT 130 < 140< 150< 160 < 170< 3 4 5 6 8 1 1.5 2 3 4 5 6 8 1000 Distance from Source (meters)

N		6 A		JBJE FT]	N TH	Ē	(0F	ERAT 95% SING	ION RPH	1)))	HE T T	E OR E M P	orac	Y 8 =	1	5 C			-) T I R	EST UN	1.4 BF-707 02
[[7 ENG						GROU TEXA					HE USE)) 	R 	EL 	HUMI	D =		0 %)) P	AGE	7
	0 <	(t																									·) }
	10<	Ċ																									,
	20 <	ì																									•
	30 <	į																									í
	40 <	ì			PEF	SONN	EL M	AY	9E 6	XP0	SED	UP	TO	968 (HINU	TES	PER	DA	Y								<u> </u>
١	50<	ì			AT	ALL	DIST	ANC	ES F	FROM	SO	URCE	EQ	UAL '	TO 0	R GR	EAT	ER	THAN	ļ	75 H	ETER	S				;
;	60<	Ċ			FOR	ALL	ANS	LES	EVA	LUA	TED	(IN	DIC	ATED	ВЧ	< AT	LE	FT)									į
	70<	ì			UND	ER T	HE F	OLL	OHIN	IG E	AR (PROT	ECT	ION (COND	1710	NS I										;
1	80<	(NO	P.30	TEC	TION	4																	;
	90<	Ċ				HI	NI MU	H Q	PL E	EAR	HUF	FS															}
	100<	Ċ				AM	ERIC	AN	0P12	GAL	17	00 E	AR	HUFF:	S												;
	110<	Ċ				V-	51R	EAR	PLU	ıcs																	•
	120<	Ċ				Co	MF IT	TF	IPLE	E FL	ANG	E EA	IR P	LUGS													;
5	130<					н-	133	GRO	UND	COM	HUN:	ICAT	ION	UNI	r												,
	140<	(;
	150<	(,
	160<	(,
	170<	()
	180<	()
		(6	8	1		1.5			3			5						5	2		3		5		8	• •

_



=

DISTANCE FROM SOURCE (METERS)

METEOROLOGY:

TEMP = 15 C BAR PRESS = .760 M H3 REL HUMID = 70 %

3

1.5

2

) IDENTIFICATION:

OMEGA 1.4 TEST PF-707-RUN 01

POINT

26 OCT 81 PAGE 18

160 178

FIGURE: SOUND PRESSUPE LEVEL (SFL)
EQUAL LEVEL CONTOURS (DB)
16 HZ OCTAVE BAND

UFERATION: 85% RPM

1.5 S

108

3

SINGLE ENGINE GROUND RUNUP IN THE TEXAS ASE HUSH HOUSE

NOISE SOURCE/SUBJECT: F-106 AIKCRAFT IN THE TEXAS ASE HUSH HOUSE J75-P-17 ENGINE

FAR FIELD NOISE

-

=

Ħ

품

ž

×

Ħ

ŧ

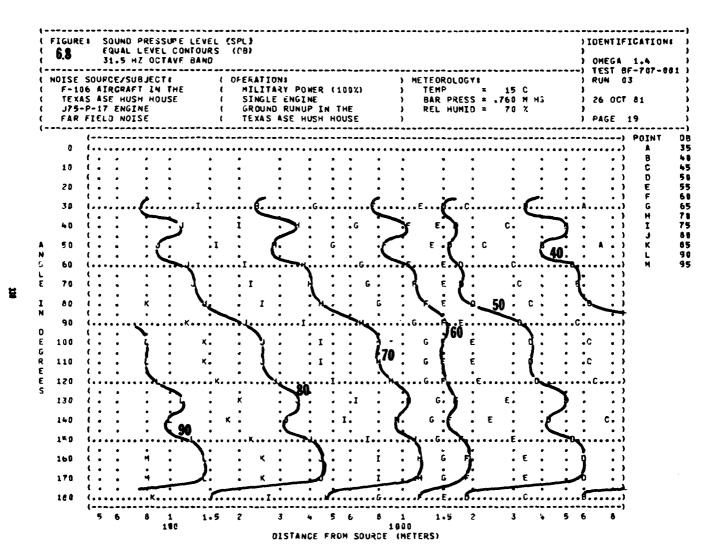
퍨

ŧ

ş

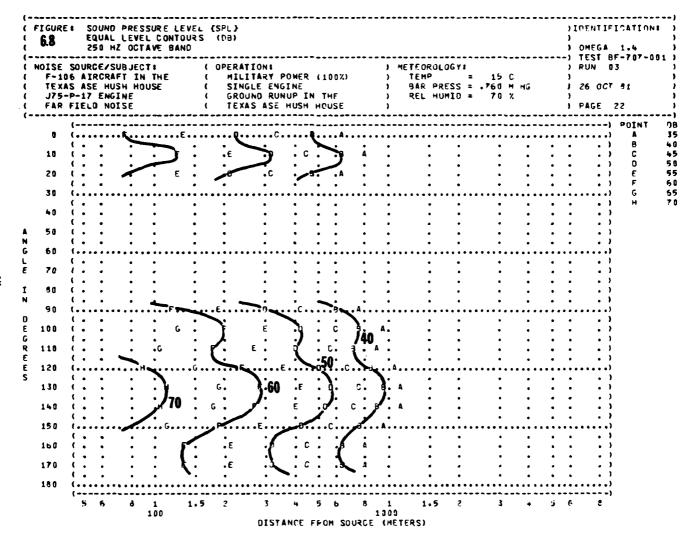
ŧ

.... a sama ye 🕟 🥆



š

¥



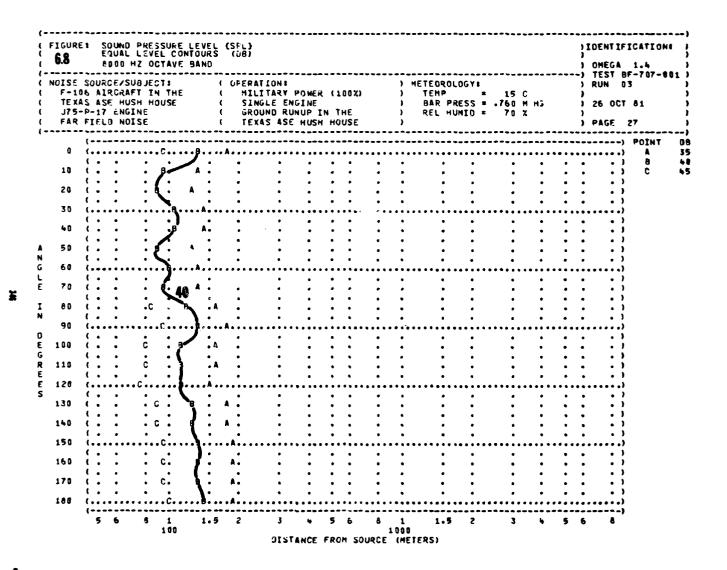
*

z

E

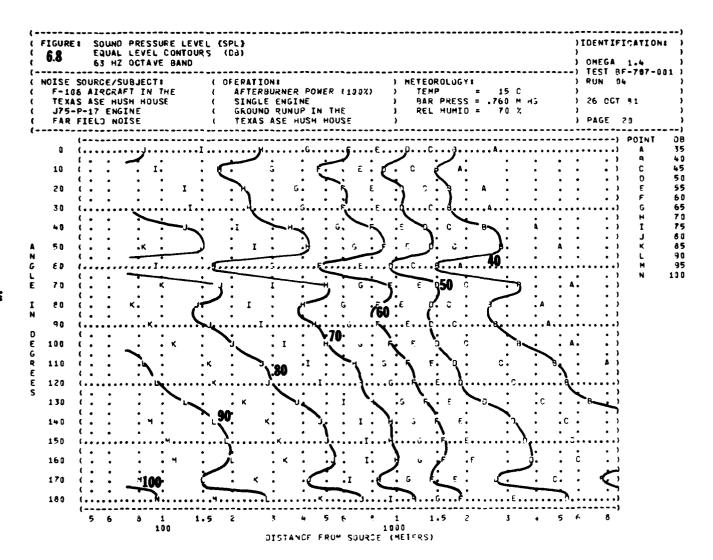
¥

ð



¥

ä



ă

뚪

¥

斑

ì

TABLE 7.1

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS F-111F AIRCRAFT IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-708-001

Aircraft Engine Operation	Single Engine
80%	30 % RPM
270	0 LBS/HR FF
76	S TIT
1.3	8 EPR
85%	5 % RPM
410	0 LBS/HRFF
86	S TIT
1.6	il EPR
95%	5 % RPM
780	0 LBS/HR FF
110	8 TIT
2.2	0 EPR
Military Power 9	6 % RPM
820	0 LBS/HR FF
112	8 TIT
2.2	7 EPR
Afterburner Power 9	6 % RPM
49,80	0 LBS/HR FF
115	8 TIT
2. 3	9 EPR
Meteorology	
Temperature 2	9 C
Bar Pressure 74	3 M HG
Rel Humidity 5	8 %
	3 M/Sec (6 Kts)
- Direction 18	0 Deg

80

62

82

81

) IDENTIFICATIONS

28<

61

284

61

284

81

28<

81

284

28<)

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

77

76

A B

79

81

51

74

78

7 L

OVERALL

TABLES

38 <

41 < 39 <

38 < 37 <

34<

40

85

40 < 38 < 37 <

49

85

38 <

36<

36<

35<

34<

31<

86

36<

33<

33< 32<

29<

87

44< 44< 37<

40<

38<

36<

82

34< 35< 35<

36 <

32<

83

METEOROLOGY:

29 C

BAR PRESS = .743 M HG REL HUMID = 58 %

44<

38<

38 < 36 <

34<

32<

85

36<

35< 34<

29<

67

36<

35< 34<

32<

29<

87

38<

36<

35< 34<

32<

29<

97

36 <

35 <

34 <

29 <

87

36<

35< 34<

32<

29<

36<) 35 < 1 34 <)

32<

29 <

37 <

34 < 37 < 33 <

30<

87

TEMP

) IDENTIFICATION:

OHEGA 1.4

TEST BF-708

RUN 82

26 OCT 81

< LEVEL CORRECTED TO PEMOVE BACKGROUND/ELECTRONIC NOISE.

43<

40 ×

40

35<

ø 0

37 <

39 <

37 <

81

40

37<

40<

41

35<

82

40<

36< 38<

36 <

38<

33<

81

35 <

35 <

34 <

34 <

81

MEASURED SOUND PRESSURE LEVEL (DB)

(OFERATION:

SINGLE ENGINE GROUND RUNUP IN THE

1/3 OCTAVE BAND

NOISE SOURCE/SUBJECT:

TF30-P-100 ENGINE

F-111F AIRCRAFT IN THE

TEXAS ASE HUSH HOUSE

DISTANCE = 100 METERS

TABLES

3150

4000

5000

6300

8000

OVERALL

10000

72

		TANCE =	BAND			EVEL)	MEGA	1.4	ION: 8-081
NO	DISE SOURCE F-111F AIR TEXAS ASE	CRAFT I	N THE USE		(9 (S	RATIO 5% RP Ingle	NI M ENGI	NE) 48)	TEMP BAR	DLOGY: PRESS	= .74	29 C) F	26 OC1	81	
	TF30-P-100 FAR FIELD							P IN USH H)	KEL 1	DIMUH	• :	,0 %		; ,	PAGE	2	
	FREQ								AN	GLE (DEGR	EES)								••••
	(H2)	9	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
					• •	• •		8.0		a 1.	87	88	84	87	87	87	87	87	87	87
	12.5	83 83	83	83 81	84 83	82 84	82 85	a 3	85 86	84 87	88	88	89	87	47	87	87	87	87	67
	16	73	86 82	84	82	84	85	84	86	85	49	87	89	90	89	89	89	89	89	89
	20 25	69<	71 <	76	77	76	74	81	80	81	85	85	86	έà	87	87	57	87	87	87
	31.5	68<	70 <	66<	72	73	75	74	76	77	8.0	79	8.0	84	64	84	84	84	84	84
	40	65<	78<	724	73<	74	73<	75	76	73<	75	76	77	80	81	81	81	81	81	81
	50	68<	65 <	70<	70<	70 <	724	71<	73<	70<	73	72<	72<	74	77	77	7,7	77	77	77
	63	63<	63<	63<	65<	67 <	67<	66<	69<	59<	71	74	73	73	71<	71<	714	71<	71<	
	8.0						55<		69 <	66 <	70<	71<	70<	71<	89<	69<	69<	69<	69<	69<
	100																			
	125											66<								
	160										_			64<	64<	64<	64<	64<		
	200										59<		-		65<	65<	65<	65<	65<	65<
	250										58<			-	67	67	67	67 58<	58<	
	315	5 1 <				_					51<	52<	54<	56<	58<	58<	58<	51 <	51<	
	480	51<	• • •	47<	47<	45 <	444			44 <	47<			49<	51< 50<	51< 50<	51< 50<	50<		-
	500	5+<	54 <	52<	54<	53<	54<	47<		48 <	45<			49<	50<	50<	50<	50 <		
	630	54<	52 <	50<	51<	50 <	53<	48<	47<	48 <	47<			47 <	49<	49<	49<	49<		
	806	5 2 <	4/ <	48<	48<	48<	49<	46<	47<	47 <	48 <	47<	46<	49<	48<	48<	48<	48<		
	1000	54<	48 <	50<	51<	51<	49<						48<		50<	50<	50<	50<	50<	
	1 25 0	57<	53 <	52<	52<	53<	524	47<	48 < 46 <	47<	46<	45<	• •		51<	51<	51<	51 <		• •
	1600	57	54	51<	50<	51<	51<	454	43<	46<	45<					50<	50<	50<		
	2000	53	51 <	49<	49<	49<	46<	41<	39<	42<	43<		• •		454	45<	45<	45 <	_	
	2500	49	48	46< 37<	48 39<	48 39<	37<	36<	36<	41<	44<			•	444	444	444	44<		
	3150	45<	36 < 35 <	36<	36<	36<	34<	32<	33<	40<	43	42	41<		42	42	42	42	42	42
	4000	39<	41 <	40<	39<	39<	39<	34<	36<	41	44	43	42	42	43	43	43	43	43	43
	5000	40	41	39	40	38 <	38<	33<	34 <	40	42	41	40	41	42	42	42	42	42	42
	6300	43	42	39<	39<	38<	39<	34<	34 <	40	42	40	39<		41	41	41	41	41	41
	6000 10000	40	3E <	364	34<	34 <	33<	31<	32 <	38	38	36<			37<	37<	37<	37<	37 <	374
	74000	70	JE *	344		74.	554													94

< LÉVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

41 37 < 42

84

91

33

40 36< 40 35< +1

95

96 94

38<

94

94 34 41 39

40

95 97

40

40

97

94

) IDENTIFICATION: OMEGA TEST BF-708

-001

89 < LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

38< 37<

39

89 66 91

36 < 35 < 38

39 < 3€ <

39

38

90

TABLE: REASURED SOUND PPESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 100 METERS

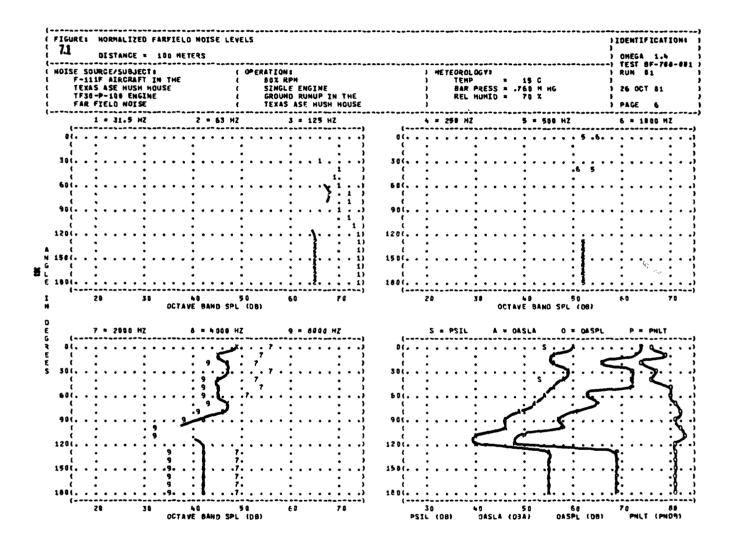
×

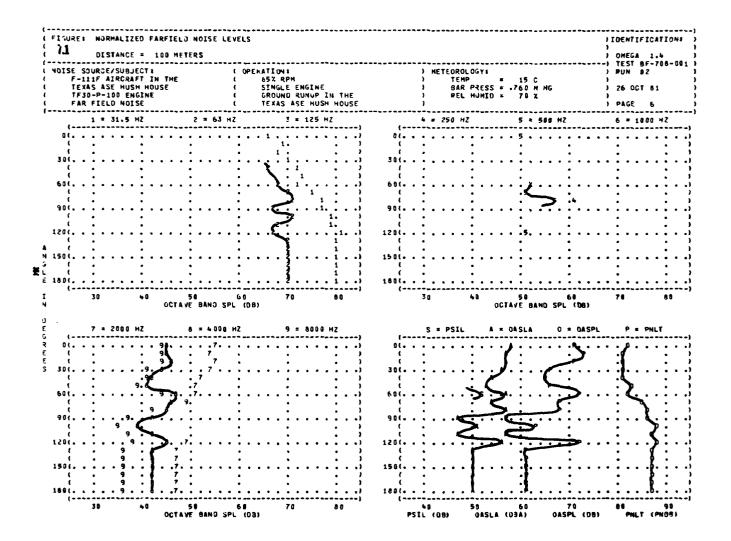
10900

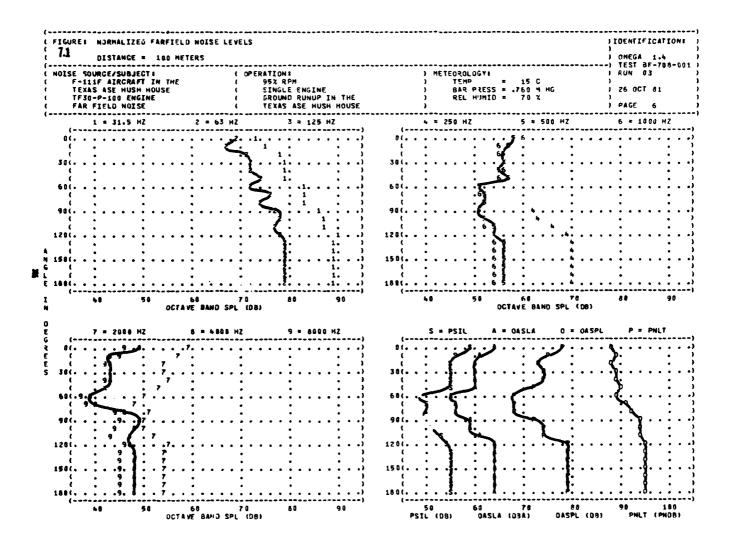
OVERALL

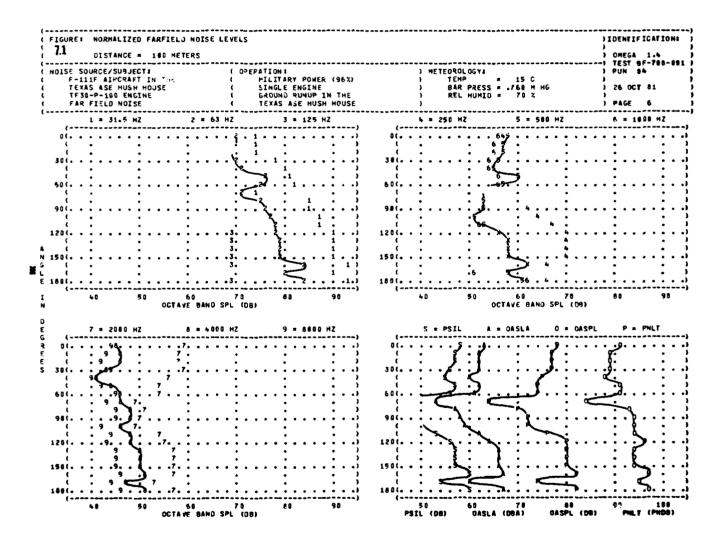
7.2 1/3 015 015E SOURCE		TI			ERATION AFTERS	N.						OFOGA		29 C		}	OMEGA TEST PUN		
TEXAS ASE				-	SINGLE			CK 196		,		PRESS			нз		26 00	T 81	
TF30-P-19					GROUNG			3HT		,		HUMID		58 %		,			
FAR FIELD	NOISE			•	TEXAS	ASE I	HOSH I	HOUSE)						•	PAGE	2	
FREQ									IGLE										
(HZ)	٥	10	20	30	40	50	60	70	88	90	100	110	120	130	140	150	160	170	186
	•	••			•••	-	••	. •	••	,,								• •	•••
12.5	94	93	91	92	93	94	92	92	93	96	96	99	95	96	96	96	97	97	97
16	93	93	91	91	92	91	95	96	95	97	98	98	99	160	100	100	99	99	99
20	90	90	93	92	93	96	94	95	97	98	100	100	191	101	101	101	101	101	10:
25	84	82	86	89	89	93	93	97	93	97	99	99	100	100	108	100	100	99	9
31.5	80	79	79	86	85	66	91	90	92	94	97	97	83	97	97	97	102	100	10
40	80	80	80	84	86	86	87	89	87	90	94	96	97	99	99	99	101	99	9
50 63	79 74	78 74	82 75	81 77	82 79	84 80	81 81	87	86	85	90 85	90	92 87	95 90	95	95	98 93	95 88	94
53 58	75<	69 <	73<	75<		76	77	83 80	84 83	83	84	86	83	87	90 87	90 87	88	85	8
100	74<	07 4	/ 34	134	70	76 73<	74<	76<	03 77 <	83<	83<		88	86	86	86	84	83<	
125	72<	68 <	67<	70<	69<	70<	694	70<	73<	78	81	79	80	89	80	80	82	79	7
160	68<	65 <	64<	67<		64<	64<	67<	69<	76<	76	76	77	77	77	77	79	77	7
200	60<	60<	61<	64<	• •	61<	61<	63<	65<	79	73	74	74	74	74	74	75	74	7
25 0	60<	58 <	5.6 <	61<		59<	594	624	64<	68	72	73	75	74	74	74	73	71	7
315	574	55 <	56<	594		55<	544	57<	60	64	66	67	68	68	68	68	68	68	6
400	55	56	54<	57	53<	54<	52<	54<	58	61	62	63	64	65	65	95	63	66	6
500	6.0	61	57	61	59	61	56	59	59	61	61	62	62	64	64	64	61	64	6
630	59	59	57	59	57	61	56	57	61	60	61	60	62	64	64	64	62	65	61
880	57	58	56<	56	57	60	58	57	62	60	61	61	64	55	65	95	62	65	69
1000	57<	59 <	57<	59	58 <	59	55<	56 <	60	61	61	61	63	64	64	64	63	66	6
1250	61	64	60	62	61	61	58	58	60	60	61	63	65	65	65	65	66	66	6
1600	61	64	61	61	61	60	58	56	59	61	60	62	65	66	66	66	62	55	6
2008	57	60	58	59	56	55	54	53	56	59	58	61	62	65	65	65	58	61	6
2500	49	53	52	55	54	51	48	48	52	57	56	57	59	58	58	58	56	59	59
3150	43<	43 <	42<	44<		45 <	44<	46	52	53	54	55	57	56	56	56	54	57	57
4088	41<	41 <	41<	41<		42	42<	44	> 0	50	51	52	52	52	52	52	50	54	54
5000	+4	46	43	44	43	43	43	44	51	51	52	51	52	52	52	52	50	53	53
6300	43	46	42	45	42	43	42	42	49	49	50	48	50	50	50	50	48	52	5
5 6 0 0 1 6 6 8 6	44	46 41	42 41	43 48	42 40	42 40	42 40	42 41	46 46	48 45	49 45	+8 45	51 48	49 46	49 46	49 46	48 46	51 49	5:

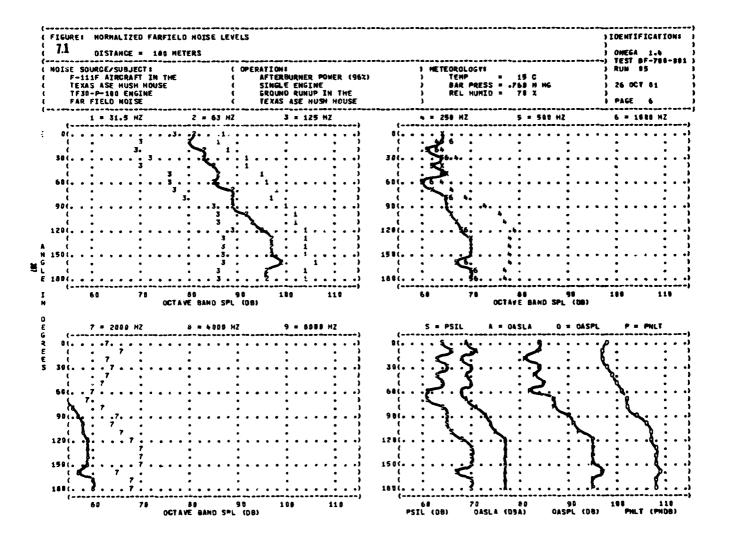
< LEVEL CORRECTED TO REMOVE SACKGROUND/ELECTRONIC NOISE.

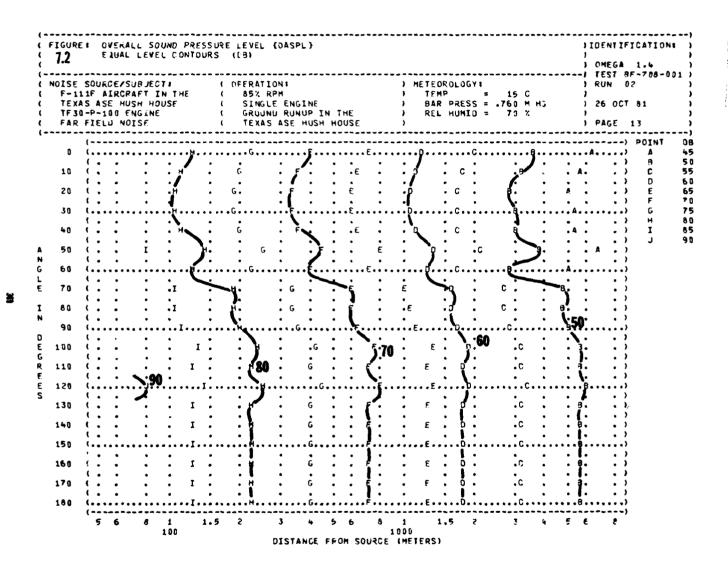




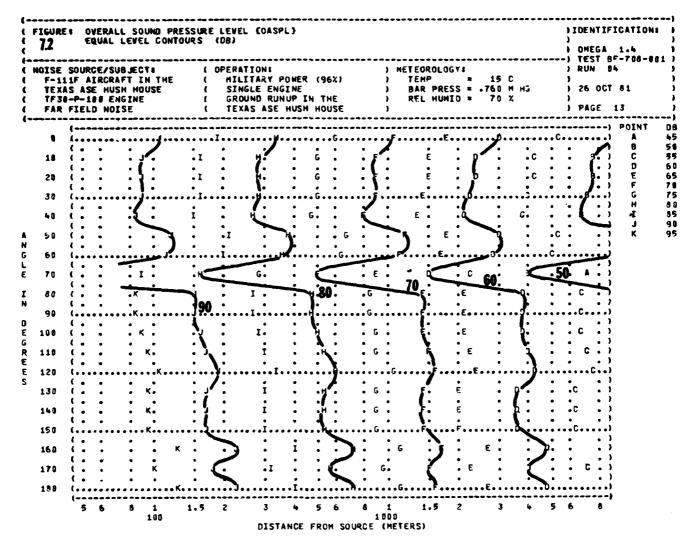








ä



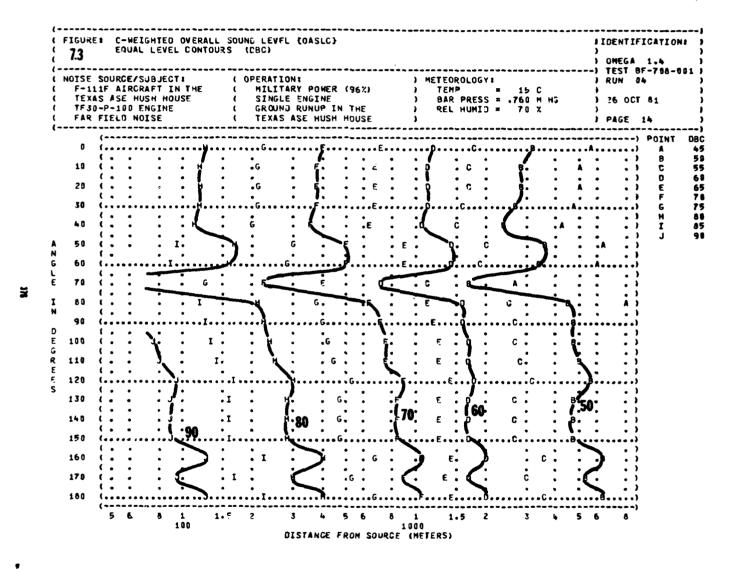
¥

322

33

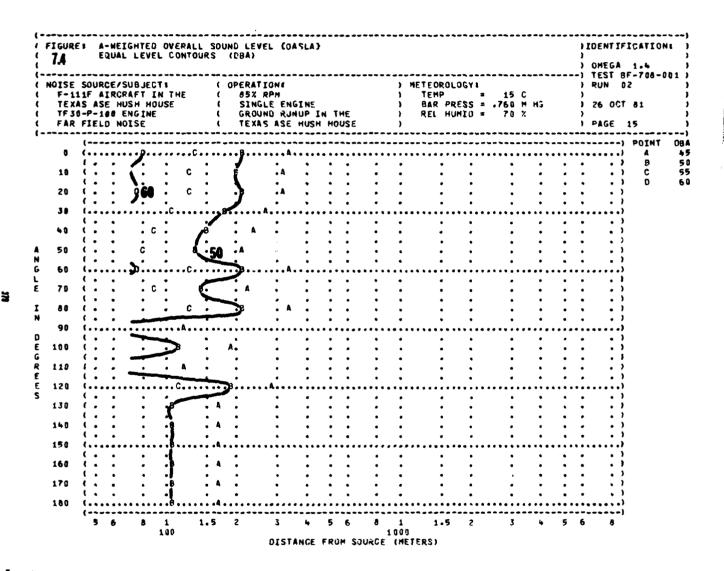
Ħ

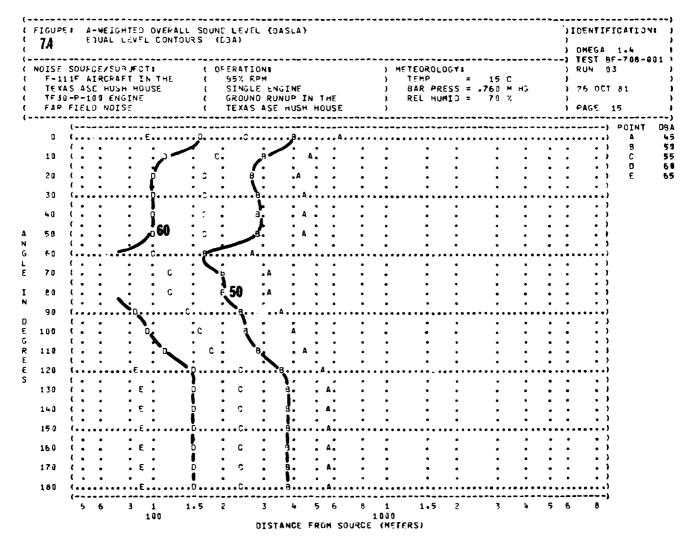
Ħ



377

š





.....

¥

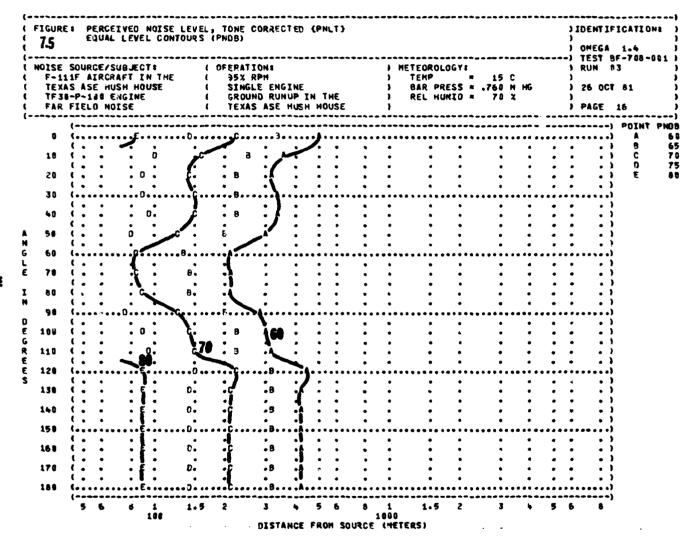
AIR FORCE ACROSPACE MEDICAL RESEARCH LAB WRIGHT-PATT--ETC F/G 20/1 USAF BIOENVIRONMENTAL NOISE DATA HANDROOK. VOLUME 172. HUSH-HOU--ETC(U) AD-A118 773 UNCLASSIFIED AMRL-TR-75-50-VOL-172 5∘.9 48.777 48.777

¥

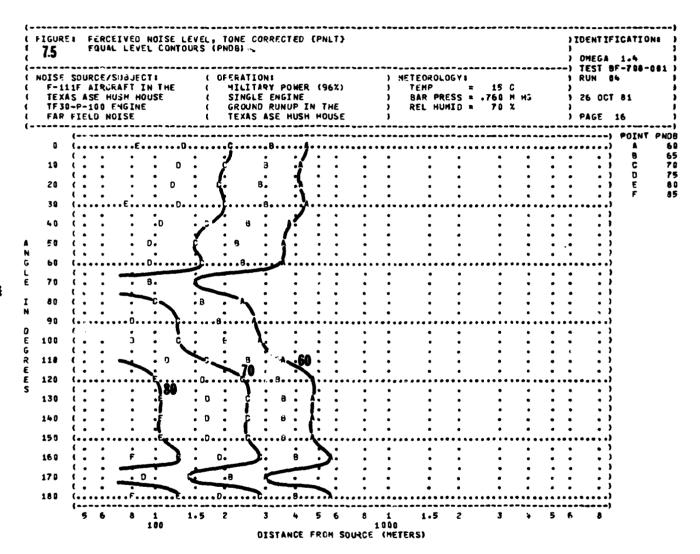
*

ž

¥



ž



ğ

1

ISE F-11 Texa TF30	SOURCE 1F A1 S ASE -P-10	E/SU RCRA HUS	BJEGT FT IN H HOU GINE	I THE ISE	((PERATIO 80% RP SINGLE GROUND TEXAS	N: H ENGI RUNU ASE H	NE IP IN IUSH	TH HOU	E SE		HETED TEM BAR REL	ROLOG P PRES HUHI	Y: = S = .7 D =	15 C 60 M 70 X) OMEG() TEST) RUN)) 26 Q()) FAGE	8F-788-6 01 CT 81 17
0	1	••••	E .		.D	c	••••	9		.A	••••		••••		••••	••••	••••	• • • • • •	-) POINT
10	(.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •) B
20	(.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •) 0) E
30	(.	•	•		•	•			•	•	•	•	•	•	•	•		• •) -)
40	(•	•	ε.	. 0	•		. 8	•	: .	•	•	•	•	•	•	•	•		3
50		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		,
60	<u>; </u>	:	:	:	:	:	:	:	:	:	:	•	•	•	•	:	•	: :	į
	(•	• • • • •	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	.,
70	(.	•	•	•		:	•	•	:	•	•	•	•	•	•	:	:	• •	;
8 8	(.	•	•	•	:	•	•	•	•	•	•	•	•	•	•	•	•	: :)
90	(•	• • • • • •	•	•	•	• • • • •	•	•••	•	••••	• • • • • • • •	•	• • • • • •	••••	••••	••••	• • • • •	•}
00	(.	•	•		•	•	•	•	•	•	•	•	•	•	:	•	:	• •)
10	(.	:	:	:	•	:	•		•	•	:	•	•	•	•	•	•	• •)
20	(••••	• • • • •	•••••	• • • • •		••••	••••	•••	•••••	••••	•••••	•••••	•••••	••••	••••	• • • •	•••••	•}
30		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•)
40		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•)
50	<u></u>	•••••	••••	••••••	·····		••••	••••	•••	•••••	••••	•	·····	·	•••••	••••	••••	•••••	્રં
60		:	•	:	:	:	:	•	:	:	•	•	:	•	:	:	:	: :	į
70		•	:	:	:	:	:	:	•	:	:	•	:	•	:	:	:	: :	į
8 8	(. (•	•	• • • • • • •	•	• • • • • • • •	•	•	•	•	•	• ••••••	•	•	•	••••	•	• • • • •	.;

¥

16URE 1 7.6	E(UAL	LEVE	. CONTO	UR S			(P\$: : :	OMEG TEST	IFICATION A 1.4 BF-708-0
OISE S						OPERATIO						METE TE	DROLDG	YE		_			RUN	0.5
F-111	F A	RCRA	FT II	N THE	(85% RP	M					TE BA	HP Doce		15	C	_			CT 81
TF 30-	A 51	. MUS	C THE	12F	•	SINGLE	ENGL	NE TN	TH	_	1	RE	K PKES) =	70	т п. У	,		26 0	161 51
FAR F					(TEXAS	ASE H	USH	нои	SE)				••			PAGE	17
																				-) POINT
0		• • • • •	• • • • •	• • • • • • •		• • • • • • •	••••		• • •	• • • • •		• • • • • •	• • • • • •	••••		• • • • •	• • • •	• • • •		.) A
10		•	•	•	•	•	:	•	•	•	•	•	:	:	•		•		•	i č
		•	:		•					•		•	•	•			•			ס נ
20 (•	•	•		•	•	•	•	•	•		•	•	•		•)
(•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•		}
30		• • • •	••••	• • • • • •	• • • • •	• • • • • • •	••••		• • •	••••	••••	• • • • • • • • • • • • • • • • • • •	• • • • • •	• • • •	• • • • •	••••	• • • •	• • • •		.)
40		:	:	:	•	•	:	:	:	:	:		:	:	:		•			, ,
		•	•	•	•	•	•	•	•	•		•		•	•		•			.)
50	• 1	•	•	•	•	•		•	•	•	•	•	•	•	•		•	•)
60		•	•	•	•	•_	٠.	•	٠,	•	•	•	•	•	•		•	•	•	
עם (• • • • •	••••	• • • • • • • •	••••	••••••		••••	• * •	••••	• • • •		• • • • • •	••••	• • • • •	••••	• • • •	•		
70			:					•		•	•	•	•	•	•		•	•		. •
	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•		.)
80		•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•		. }
90		•	•	•	•	•	•	•	•	•	•	, 	•	•	•		• 			ذ م
		•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	, 📆
100	٠.	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•		. !
		•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•		,)
110		•	•	•	•	•	•	•	•	•	•	•	:	:	:		•	•	•	; ;
120	i	• • • • •		• • • • • •	••••		••••	••••	• • •	• • • • •	• • • •		•••••	••••	• • • •		• • • •	• • •	• • • • •)
		•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•		. 1
130	•	•	•	•	•	•	•	•	•	•	•		•	•	•		•	•		, ,
140	:	•	:	•	:	•	:	:	•	•	:	•	:	:	•		•			, j
	i .	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•			.)
150		• • • • •		• • • • • • •		• • • • • • •		••••	•••	• • • • •	• • • •	• • • • • •	• • • • • •	•••	• • • • •	• • • •	• • • •	• • • •	• • • • •	••)
460		•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	. 1
160		•	•	•	•	•	•	•	•	:	:	•	:	:	•		•	•		, ,
170	: :	•	•		:	•	:	•	•	•	•	•	•	•			•	•		•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•		. }
180		• • • •	• • • •	• • • • • •	• • • • •	• • • • • • •		••••	• • •	• • • • •	••••		• • • • • •	• • • •	• • • •	••••	• • • •	• • • •		J
1	5	6	8	1	1.5	2	3	4	 5	6	8	1	1.5	2	3		4	5 (6 6	·•
	-	-	-	100							10	00								

*

¥

```
FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
                                                                                                    ) IDENTIFICATION:
           EQUAL TIME CONTOURS (MINUTES)
   7.7
                                                                                                      OHEGR 1.4
                                                                                                    ) TEST 8F-705-001
) RUN 01
  NOISE SOURCE/SUBJECT:
                                                                   ) METEOROLOGY:
                                 ( OFERATION:
                                                                       TEMP = 15 C
BAR PRESS = .760 M HS
    F-111F AIRCPAFT IN THE
                                     80% RPM
    TEXAS ASE HUSH HOUSE
TF30-P-100 ENGINE
FAR FIELD NOISE
                                      SINGLE ENGINE
                                                                                                    ) 26 OCT 51
                                     GROUND PUNUP IN THE
                                                                       REL HUMID =
                                     TEXAS ASE HUSH HOUSE
                                                                                                    PAGE 7
     0 <
    10<
    20 <
    30 <
    40 <
                      PERSONNEL MAY BE EXPOSED UP TO 950 MINUTES PER DAY
    50 <
                      AT ALL DISTANCES FROM SOURCE EQUAL TO OF GREATER THAN
                                                                                  75 METERS
Ģ
    60<
                      FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
£
    70<
                      UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
                            NO PROTECTION
    90 <
                            MINIMUM CPL EAR MUFFS
   100<
                            AMERICAN OPTICAL 1700 EAR MUFFS
   110 <
                            V-51R EAR PLUGS
   120 <
                            COMFIT TRIPLE FLANGE EAR PLUGS
                            H-133 GROUND COMMUNICATION UNIT
   130 <
   140<
   150<
   160<
   170<
   180<
                                                             8 1
                                                                              2
                      1.00
                                           DISTANCE FROM SOURCE (METERS)
```

į

OISE SOU F-111F TEXAS A	AIRCE/SUBJECT: (OFERATION:) METEOROLOGY: AIRCRAFT IN THE (85% RPM) THPP * 15 C ASE HUSH HOUSE (SINGLE ENGINE) BAR PRESS = .760 M H -100 ENGINE (GROUND RUNUP IN THE) REL HUMID = 70 %	
FAR FIE	ELD NOISE (TEXAS ASE HUSH HOUSE)) PAGE 7
0< (}
10< ()
28< (1
30< (,
40< (PERSONNEL MAY BE EXPOSED UP TO 960 HINUTES PER DAY))
50 < (AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS))
60< (FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT))
70 < (UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:)
80< (NO PROTECTION	3
90< (MINIMUM OPL EAR MUFFS	;
100 < (AMERICAN OPTICAL 1700 EAR MUFFS	}
110<	V-51R EAR PLUGS	į
120<	COMFIT TRIPLE FLANGE EAR PLUGS	į
130<	H-133 GROUND COMMUNICATION UNIT	;
140<		;
150<		, }
160<		Ś
170<		į
180< (;

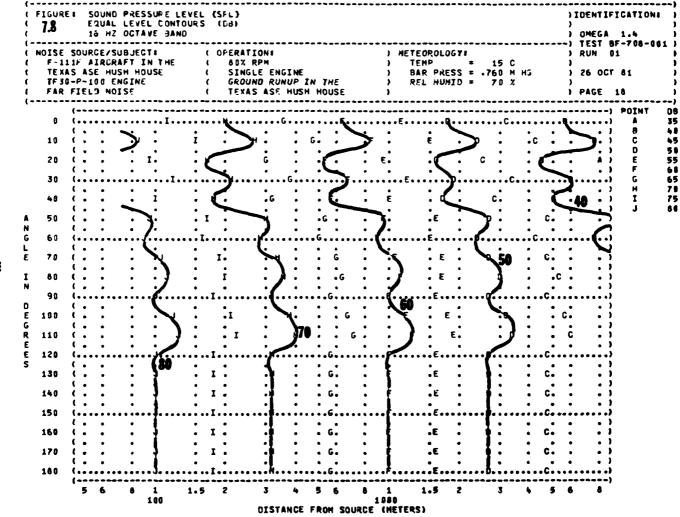
Ħ

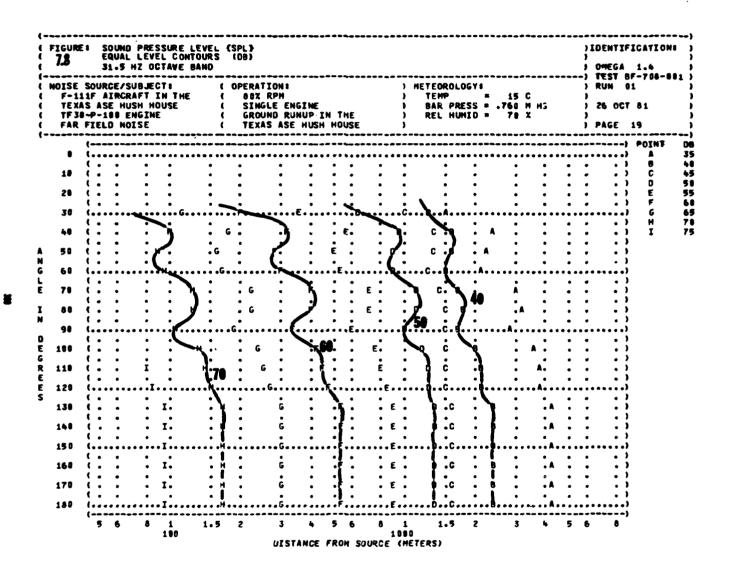
```
FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) 7.7 EQUAL TIME CONTOURS (MINUTES)
                                                                                                                  IDENTIFICATION:
 7.7
                                                                                                                  ) OMEGA 1.4
                                                                                                                    TEST 8F-708-001
RUN 03
NOISE SOURCE/SUBJECT:
                                                                             METEOROLOGY:
                                    ( OPERATIONS
  UISE SOURCE/SUBJECTS
F-111F AIRCRAFT IN THE
TEXAS ASE MUSH HOUSE
TF30-P-100 ENGINE
FAR FIELD NOISE
                                         95% RPH
                                                                                                 15 C
                                                                                BAR PRESS = .760 M HS
REL HUMID = 70 %
                                         SINGLE ENGINE
GROUND RUNUP IN THE
TEXAS ASE HUSH HOUSE
                                                                                                                    26 OCT 81
                                                                                                                  ) PAGE
   1 <
  18<
  20<
  30 <
  40 <
                        PERSONNEL MAY BE EXPOSED UP TO 960 HINUTES PER DAY
                        AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN
                                                                                            75 METERS
  50 <
  60 <
                        FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
  70 <
                        UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
  88<
                              NO PROTECTION
  90 <
                              HINIMUM QPL EAR MUFFS
                              AMERICAN OPTICAL 1780 EAR MUFFS
 180 <
 110<
                              V-51R EAR PLUGS
 120<
                              COMFIT TRIPLE FLANGE EAR PLUGS
                              H-133 GROUND COMMUNICATION UNIT
 136 <
 148<
 158<
 160<
 170<
 180<
                                1.5
                                                                      6 1
1000
                        100
```

DISTANCE FROM SOURCE (METERS)

OISE F-: TE: TF: FAF	SOURCE/SUBJECT: (OFERATION:) METEOROLOGY: 11F AIRCRAFT IN THE (MILITARY POWER (96%)) TEMP = 15 C AS ASE HUSH HOUSE (SINGLE ENGINE) BAR PRESS = .760 M MG 8-P-10@ ENGINE (GROUND RUNUP IN THE) REL HUNID = 70 % FIELD NOISE (TEXAS ASE HUSH HOUSE)	-) TEST BF-706-0() RUN 0%))) 26 OCT 81)) PAGE 7
ŋ.	(·}
10)
28		3 1
30	· (· (;
40	(PERSONNEL MAY BE EXPOSED UP TO 968 MINUTES PER DAT)
50	(AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS	}
60	FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)	<u>;</u>
70	UNDER THE FOLLOHING EAR PROTECTION CONDITIONS:	}
88	NO PROTECTION	•
90	NINIMUM OPL EAR HUFFS	;
100	AMERIGAN OPTICAL 1700 EAR MUFFS	į
110	V-51R EAF PLUGS	į
120	COMFIT TEIPLE FLANGE EAR PLUGS	į
130	H-133 GROUND COMMUNICATION UNIT	j
140)
158))
160)
170)
180	ı i	j

(FIGURE 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	7 SE S -111 EXAS F30-	MAXINUM PERMISSIBLE TIME (T) FOR EQUAL TIME CONTOURS (MINUTES) DURGE/SUBJECT: (OPERATION! F AIRCRAFT IN THE (AFTERBUR ASE HUSH HOUSE (SINGLE EP-188 ENGINE (GROUND R		ROLOGY: * 15 C * 260 M H3 HUMIO = 74 X	DIDENTIFICATIONS DOMEGA 1.4
11 21 31 44 A 56 A		PERSONNEL MAY BE EXPOS AT ALL DISTANCES FROM FOR ALL ANGLES EVALUAT	D UP TO 960 MINUTES PER DA OURCE EQUAL TO OF GREATER D (INDICATED BY < AT LEFT) PROTECTION CONDITIONS: OFFS 700 EAR MUFFS GE EAR PLUGS	NY THAN 75 HETERS	· · · · · · · · · · · · · · · · · · ·
	•	5 6 8 1 1.5 2 3 100 DIS	ANCE FROM SOURCE (METERS)	5 2 3 4 5	6 ¢



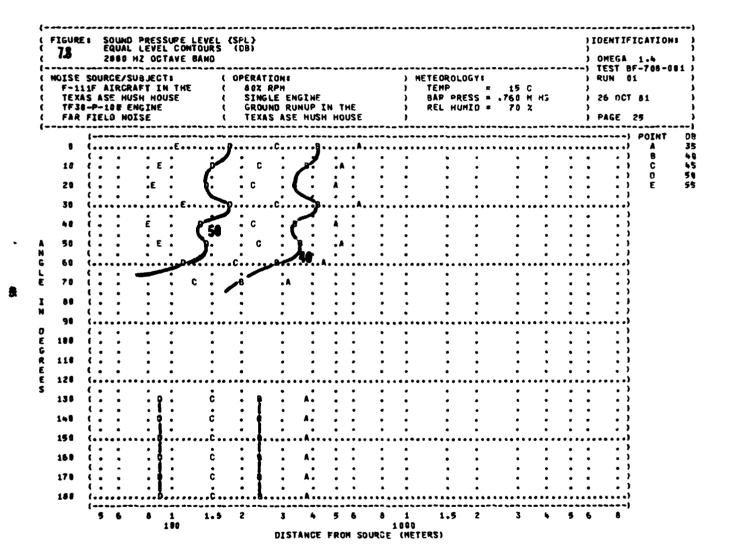


7.8	}		3 3	HZ C	EVEL	URE LE CONTO E BANG	URS	(D3)	·· >										1	OHEG	IFIGATIONS A 1.4 BF-708-05
ЮI	SE S	SOUF	₹C E	/SUE	JECT		(OPERAT 1	ON V) ME	TEOROLOG	Y*				RUN	01
T	EXA:	17 / 5 AS	IIX	HUSH	HOU	SE	ť	BOX R Singl	PH E ENG	INE				;	TEMP BAR PRES	: : :	15 C			26 0	CT 81
Ţ	F30	-P-1	100	ENG	INE		(GROUN	D RUN	UP IN	TH	E)	BAR PRES	0 =	70 X				-
	***	. 161		MOTZ																PAGE	
		(-) POINT
		· ·	•	,	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•) ê
1	4	(.	•		•	•	:	•	•	:	•	•	•	•	:	:	•	•	•	• •) 6
2	0	٠.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•) E
3		 .	•	, , • • • •	•	•	• • • • •	•	•••••		•	. 	•	• • • • •	•	•	•		•		.; [
4			•		:	•	:	•	:	•	•	•	•	•	:	•	•	•	•	•) H
Ī				•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	į
5	•	:	•	•	•	•	:	•	:	:	•	•	•	•	•	•	•	•	•	• •	,
6	0	•••	•••	••••	••••	•••••	••••	•••••	••••	• • • • •	•••	••••	••••	••••	• • • • • • •	****	•••••	••••	••••	•••••	.)
7	•		:	,	.н	•	Ġ		• :	.E	:	D	. c	: в	A.	:	:	•	:	: :	, .
	6	(.	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•)
Ī	_	į :	•		•	•	•	•	•	•	•	;	•	•	•	•	•	•	•		į
9		(•••	• • • •	•	•••••	•	•••••	•••••	• • • • •	•••	• • • • • •	• • • •	•	• • • • • • • •	•	•	••••	••••	• • • • • •	•)
10	•		•	,	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	,
11	0	: :		•	:	:	:	:	•	:	•	•	:	:	•	:	:	:	•	•	;
12	0	(. (•	, 	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	.)
			•	,	•	•	•	-•	•_	•	:	•	•	•	•	•	•	•	•	•)
13	U	•	:	•	•	•G	•	i :	•E	•	Ĭ	• •	: 1	***	•	•	•	•	•	• •	;
14	8	(.	•		•	•G	•	j:	•E	•) Ea	. 0	. 1		A .	•	•	•	•	•	;
15	•	į	•••	••••	••••	.6		Ě.,,	E				·	••••	A	•••••	•••••	•••••	••••	•••••	
16		(.	٠	•	:	•	•]- 69	.E	•	į			•	A :	•	•	•	•	• •)
	-	•	•	•	•	•	•	Ĭ.	•	•	Ĺ	•	. !		•	•	•	•	•	•	,
17	4	::		•	:	•6	•	i :	•E	•	Ĭ	•		•	• •	•	•	•	:	•	;
18		(• • •	••••		.6	••••	ř	E	• • • • •	0	C	• • • •		A	••••	•••••			•••••	.)
		, <u> </u>		L		1	1.5	2	3	4	5	 L	8	1	1.5	2	3		5	b 8	

FIGURE : SOUND PRESSURE LE 78 EQUAL LEVEL CONTO 125 HZ OCTAVE BAN	URS (GB)) IDENTIFICATIONS)) OMEGA 1.4) TEST BF-766-661
(MOISE SOURCE/SUBJECT: (F-111F AIRGRAFT IN THE (TEXAS ASE HUSH HOUSE (TF30-P-100 ENGINE (FAR FIELD NOISE	(OPERATION: (80% RPH (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) HETEOROLOGY:) TEMP = 15 C) BAR PRESS = .760 M H3) REL HUMID = 70 X)) RUN 81)) 26 OCT 81)) PAGE 21
	-EITHER NO INPUT DATA WERE COMPI R LEVEL REQUESTED IS GREATER TH		

*

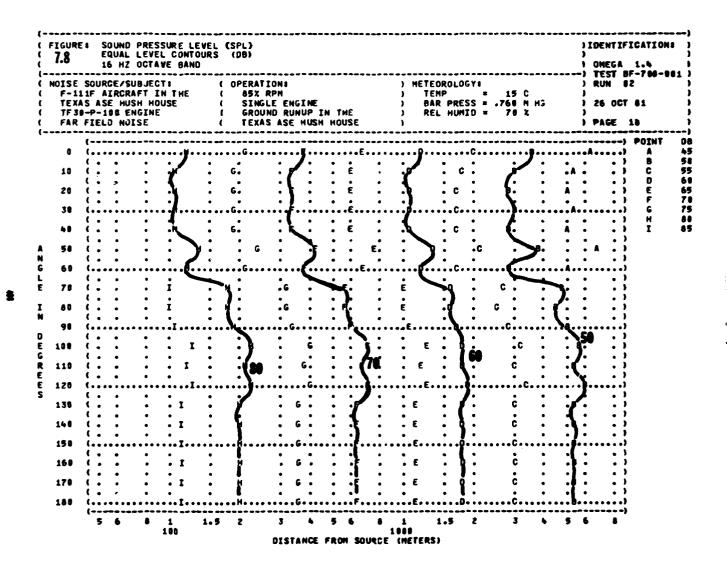
(FIGURE: 7.8	SOUND PRESSUPE LEV EQUAL LEVEL CONTOU 250 HZ OCTAVE BAND	RS (CB)) IDENTIFICATION:)) OMEGA 1.4 :-) TEST BF-706-081
(F-111F	DURCE/SUBJECT: FAIRCRAFT IN THE ASE HUSH HOUSE	(OPERATION: (80% RPM (SINGLE ENGINE) METEOROLOGY8) TEMP = 15 C) BAR PRESS = .760 M MG) RUN 81) 26 OCT 81
(TF30-P	P-100 ENGINE LELD NOISE	GROUND RUNUP IN THE TEXAS ASE HUSH HOUSE) REL HUMID = 70 %) PAGE 22
(((EITHER NO INPUT DATA WERE COMPU LEVEL REQUESTED IS GREATER THA		

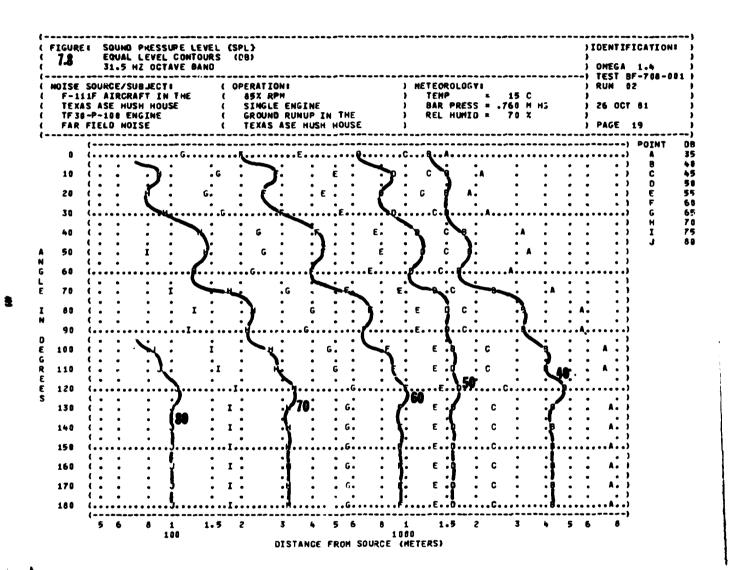


.______

GURE	€Q 40	UAL L	EVEL	AVE	LEVE NTOUR BAND	s (DB)														IDENT OMEG TEST	A 1	.4	
ISE 5 F-111					F	(0		TION:)	METEO:		.Y1	15	C			RUN	01		
TEXAS	S ASE	HUS	H HOU	ISE		(SIN	GLE E)	BAR	PRES	S =	.760	N H	;) 56 C	CT 8:	L	
FAR F						(UND RI As asi)	REL	HUMI	: 0 =	70	×.) } Page			
		HOTS) E 								103E													
_ ((-) P	THIC	
0	((.	• • • • •	ر:		• • • • C	••••	·••••	• • • • A	• • • •	• • • •	• • • • •	••••	••••	• • • • • •	••••	• • • •	••••	• • • •	• • • •	•••	•••••	•)	A B	
10	<i>:</i> :	•	•	Č	è			:	:	:			:		•	:			•	:	•	j	Č	
	•		•	•	` ,	<u> </u>	•	. •	•	•	•	•	•		•	•	•		•	•	• •)	D	
20	(-	• [750	•	С.	7	(* :	:	:	:	:	:		•	:	:		:	:	•	,		
30	····	••••	<i>J</i>	••••	.c	اور		. A	• • • •	••••	• • • • •	••••	• • • •		• • • • •	• • • •			• • • •	•••	• • • • •	.)		
40	(•	•	٠,	•	2		٠.	•	•	•	•	•	•		•	•	•		•	•	• •)		
70		•		•	ſ	40	. ^	:	:	:	:	:	:		•	:	:		•	:	•	,		
50	•	•	•	С		•	. A	•	•	•	•	•	•		•	•	•		•	•)		
60	(•	•	•	:	•	1.	٠.	•	•	•	•	•	•		•	•	•		•	•	• •	,		
	· •		• • • • •	•	•••••	T	•	• • • • • •	•	•	• • • • • •	•	•	•••••	•	•	•	••••	•	•		•;		
78	•	• }	•	. (7	•	A .	•	•	•	•	•		•	•	•		•	•	• •)		
80	(.	•	•	.c	•		. A	•	•	•	•	•	•		•	•	•		•	•	•). 1		
	: :	:	:	•	Ż		• •	:	:	:	:	:	:		:	:	:		:	:		,		
90	····	••••	. C	••••	۰۰۰م	A	••••	••••	•••	• • • •	• • • • •	• • • •	• • • •	• • • • •	• • • • •	••••	• • • •	••••	• • • •	• • •	•••••	•)		
.00	(.	•	•	: /	•		•	•	:	:	•	:	:		•	•	:		:	:	•	,		
		:					:		·	:		:			Ū	•			•		•	j		
110	•	•	•	•	•		•	•	•	•	•	•	•		•	•	•		•	•	• •)		
20	 (•	• • • • • •	•	•		•	• • • • •	•	•	•	•	•		• • • • • •	•	•		•	•	•	.;		
	(.	•	. •	•			•	•	•	•	•	•	•		•	•	•		•	•	•)		
130	(.	• (· ·	: 1	•	A	•	•	•	•	•	•	•		•	•	•		•	•	•)		
46	: :	•	::	: 1	1:	A	:	:	:	:	:	•	:		•		:		•	•	•	;		
	•	•	•	•]		_	•	•	•	•	•	•	•		•	•	•		•	•	•)		
150		••••				A	••••	• • • • •	• • • •	••••	••••	••••	••••	•••••	•••••	••••	••••	••••	••••	•••	•••••	•1		
160	<i>:</i> :	. (c:		, i	A	:	:	:	:	:	:	:		•	•	:		:	•	•	j		
		•	•	• [ŀ		•	•	•	•	•	•	•		•	•	•		•	•	• •)		
70		• (: }			•	•	•	•	•	•	•		•	:	•		:	:	•	,		
180	····	••••	c		. :	4	••••	• • • • •	• • • •	••••	• • • • •	••••	••••	••••	• • • • •	••••	••••	• • • •	• • • •	•••	• • • • •	.)		
•	(5			1	 1 .	 5	2	3	 4		6		1	1	 .5	>	3		 `	5	5 8	-)		
	•	•		00	••	•	-	3	•	,	•	-	100	_		•	•		•	•	- 0			

F-11: TEXAS	SOURCE SOURCE 1F AS	E/SU ERCRA HUS	LEVEL Z OCT BJECT FT IN H HOU IGINE	AVE B I THE SE	AND (OPE	ERATION SOX RPH SINGLE GROUND	I ENGI							: S =	15 .760 70	H H	 3	 	OHEC TEST RUN) 26 (8F-	708-0
FAR I	FIEL	NOI	SE		(EXAS A		USH	HOU	SE) 							PAGE	27	
0	((9) P	THIO
10	(.	•	1	ċ	7	A .			•	•	•	•	•	•	•		•••	•	•		,)	B C
		:	. : OU	· 1	/ : .	•		,	•	•	:	•	•	:	:	:		:	•		, ;	Ö
20	(.	:	• ¢	: १	· ^	•		•	•	:	•	:	•	:	•	:		•	•	• •	; ;	
30	(•	•0•••	G	·"	A .	•••••		••••	• • •	••••	• • • •	• • • • • •	•••••	•	••••	••••	••••	• • •	•)	
40	(.	•	C	- 64	0 · A	•	•	•	•	•	•	•	•	•	•	•		•	•		.)	
50	; :		C	: 7	. A	•		•		•	•	:	•	:	•	•		:	•		į	
60	<u></u>	•	.ċ	` /	A.	• • • •	•••••	, 	•	: 	• •••••	·	• • • • • • •	•	•	••••		• • • • •	•	•		
70	· ·	•	.c	: 🖌	. A	•	•	,	•	•	•	•	•	•	•	•		•	•	•	; ;	
80	(.	:	c:	:♪	Á	•		•	:	•	•	•	•	•	•	:		•	•	• •	.)	
98	(•	•	مرين	/	•	•			•	•	•	•	•		•	•		•	•)	
100	•	•	<u>.</u>	•	•	•			•	•	•	•	•	•	•	•	••••	•	•	•		
-		:	•	:	•	:	,	•	•	:	•	:	•	:		•		•	:	• (
110	(.	:		•	•	•	,	•	:	•	•	•	•	•	•	•		•	•	• •	; ;	
120	(• • • ·	• • • • •	• • • • •	•••••	••••	•••	••••	• • • •	••••	•••	• • • • • •	••••	• • • • • •	•••••	••••	••••	••••	• • • •	• • • •	•)	
130	(•	•	•	4	•	•	•	•	•	•	•	•	•	•	•	•			•	• •	.)	
140	<i>(</i> :	•	•	Ā	•	•		•	•	•	•	•	•	•	•	•		•	•	•	,)	
150	<u></u>	•	•••••	ä	••••	•••	•••••		••••	••••	· • • • • •	• • • •		••••••	•	••••	••••	••••	•	•••••		
160	(.	•	:	À	•	:	•	•	:	•	•	•	•	•	•	•		•	:	•	.)	
170	(.	:	•	Å	•	•	•		•	•	•	•	•	•	•	•		•	:		.)	
189	(. {aaa	•	•	A	•	•		•	•	•	•	•	•	•	•			•	•		.)	
	(6	8	1	1.5	2				 5		8	1	1.5	2	3		4	5) 3	

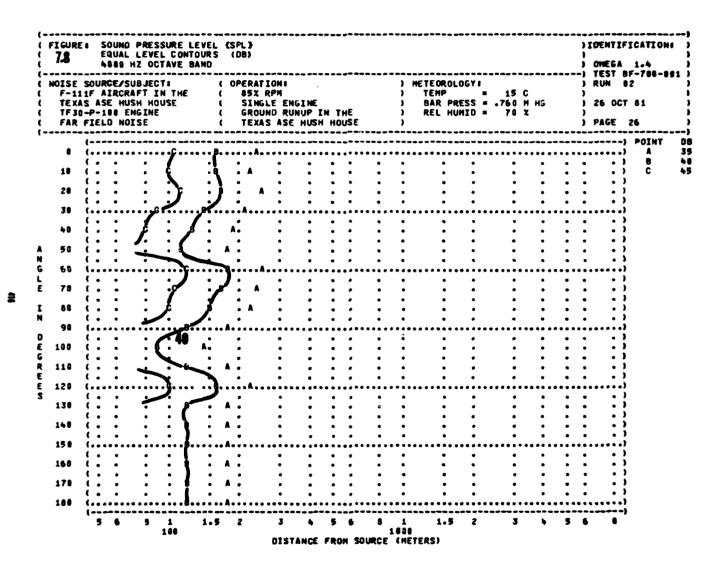




7 2	EQU	AL LI	EVEL	URE LEV CONTOU	RS	(SPL	-					 									1)) OM	IEG A	1	ATION: .4 786-88
NOISE SOU	RCE	SUB.	ÆCT		(OPE	RATIO)N:)	ME	TE OR	ROLO	GYI	1				•	RU			,
F-111F	AIR	CRAFI	' IN	THE	(5% R	M				,	1	EMP	•			1	5 C		1)		-	
TEXAS A	SE	HUSH	HOU	SE	(5	INGL	E EN	GINE)		MAR	PRE	ESS		.76	. H	H3	1	26	00	T 6	1
TF 30-P-	18E	ENG	INE		((ROUN	RU	NUP	IN	THE)		REL	HUP	I O	*	7	X		1	j			
FAR FIE	LO I	NOISE	•		(1	EXAS	ASE	HUS	H H	IOUSE)									1) PA	IGE	21	
				DA TA CONTOUR													ΈO	LE	VEL	•					

=

=



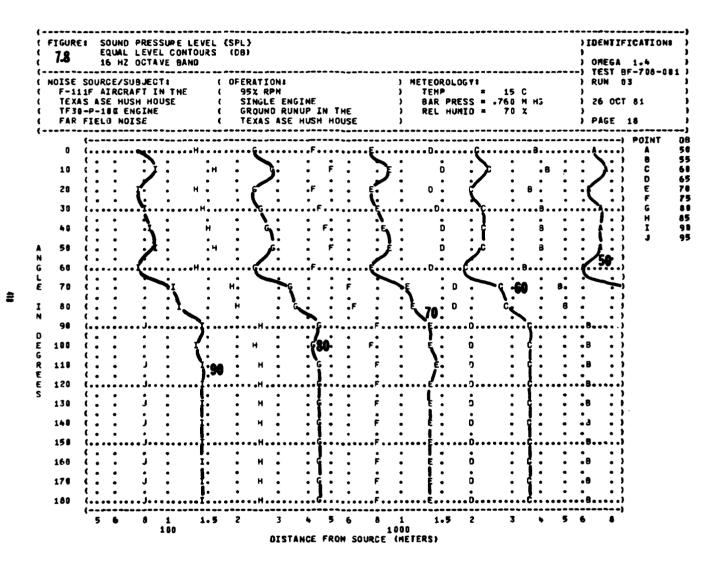
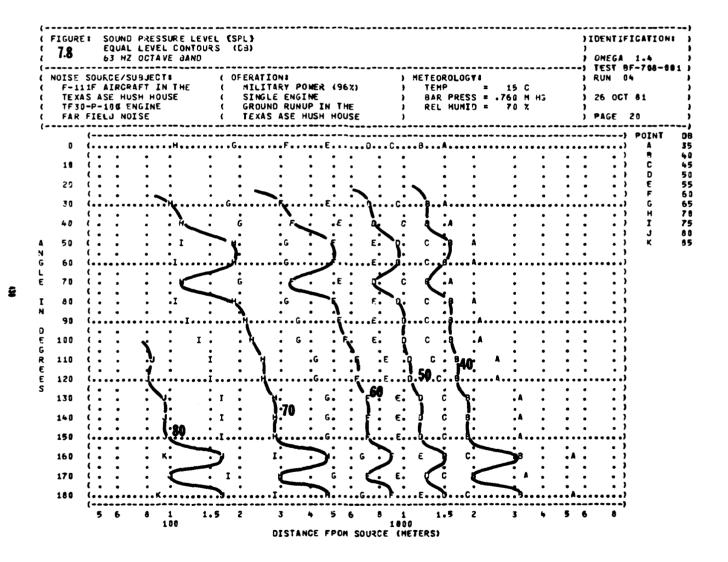


FIGURE:	SOUND PRESSURE LEVI EQUAL LEVEL CONTOU 125 HZ OCTAVE BAND	RS (DB)) IDENTIFICATIONS) OMEGA 1.4 -) TEST BF-788-081
F-111F TEXAS / TF30-P-	URGE/SUBJECT: AIRCRAFT IN THE ASE HUSH HOUSE -100 ENGINE ELO NOISE	(OFERATION: (95% RPM (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY!) TEMP = 15 C) BAR PRESS = .760 M HG) REL HUMID = 70 X)) RUN 63) 26 OCT 81) PAGE 21
		EITHER NO INPUT DATA WERE COMPU LEVEL REQUESTED IS GREATER THA		

S

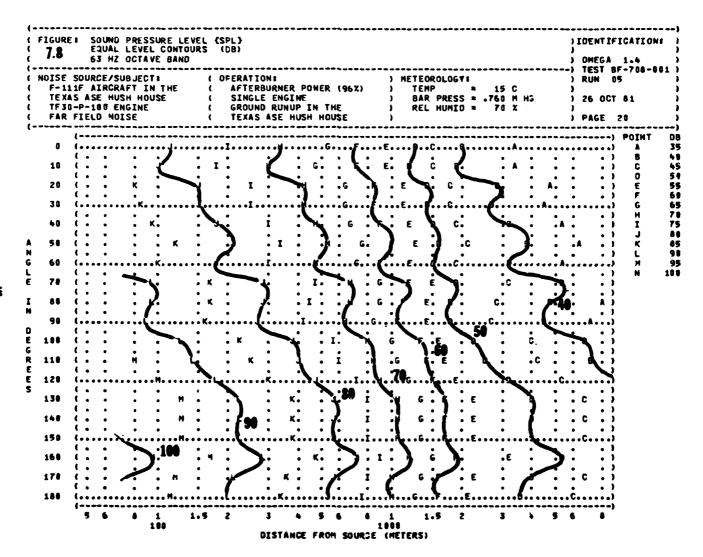


. - --- -- -

. ...

ŝ

ź



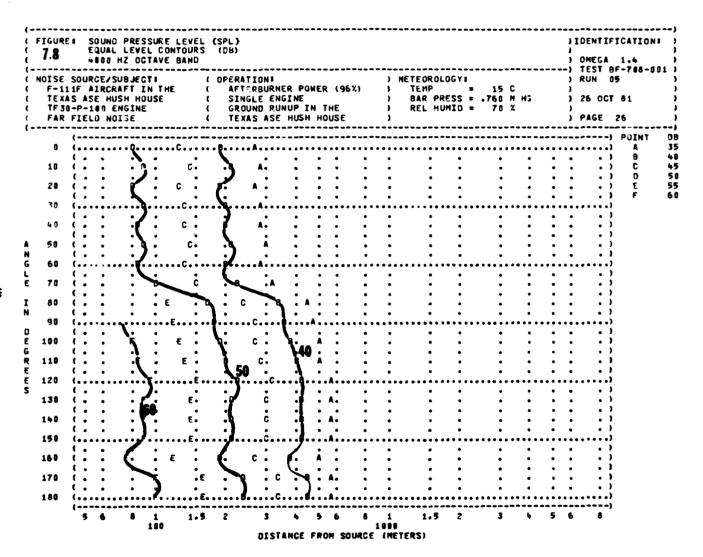


TABLE 8.1

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS T-38 AIRCRAFT IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #8F-709-001

Aircraft Engine Operation	Sin	gle Engine
80%	900 1	6 RPM LBS/HR FF
Military Power	2100 I	6 RPM LBS/HR FF
Afterburner Power	100.5	IIT % RPM
		lbs/hr ff fit
Meteorology		
Temperature Bar Pressure Rel Humidity Wind - Speed - Direction	.743 1 67 9 2 1	C M Hg K M/Sec (4 Kts) Deg

CI:	STANCE	10	-			•										-	OMEGA TEST	9F-70	
DISE SOURCE					FERATIO					•		SOFOCA	-			,	RUN	01	
T-33 AIRC				(80% R)	TEH		•	59 C		•			
TEXAS ASE		DUSE		(SINGL					?	-	PRESS			H3		\$6 00	T 51	
J85-GE-5				(GROUN					?	KEL	HUNIS	=	67 X)		_	
FAR FIELD	MOTZE			(TEXAS	A35	MUSH	MOD2 F									PAGE	2	_ .
FREQ								43	16. E	(UEGA	SEC.								
(HZ)	G	10	20	30	÷0	50	6.0	70	AG	90		110	120	130	140	150	160	178	181
*****	٠		- 4		70	,,	•		-	70	200		120	150		170	100		10.
12.5	59	bu	64	58	b 5	58	€2	58	54	59	61	63	65	62	58	59	50	71	7
16	58	60	60	56		95	58	57	59	59	59	61	61	61	57	50	58	6.4	
3.0	>6	63	61	55	51	55	58	57	57	55	Ē.	ó Õ	59	59	59	00	60	66	6
25	56	63	59	52	62	55	59	55	54	55	57	56	58	58	58	58	58	55	6
31.5	5+	63	54	50	59	54	57	55	55	52	52	59	53	>5	51	うり	55	53	F
40	54	59	52	> 3		55	5.9	58	57	57	57	57	57	57	53	53	53	62	6
50	58	56	53	52		57	56	60	59	ジョ	53	55	5+	54	53	5 5	50	61	- 6
63	56	57	₹ 2	53		55	55	59	58	55	53	54	57	57	>2	54	54	64	ь
80	67	63	51	53	-	50	51	55	54	57	52	52	54	54	53	ó۷	62	59	5
100	53	59	56	54		55	55	54	33	55	75	58	55	56	55	→ 5	4.5	5 3	5
125	59	50	56	56	• .	52	53	52	49	52	52	51	51	51	46	45	45	51	÷
160	52	52	46	47		45	47	47	43	47	45	46	47	47	45	46	46	45	4
200	52	52	45	49		42	42	43	39	43	4.0	44	4.5	45	41	40	4.0	42	4
250	53	4.9	47	46		41	40	42	40	42	39	43	45	+5	41	39	30	42	4
315	47	43	43	41		36	34	38	34	37	36	41	41	41	37	37	37	39	3
400	43	41	36	36		33	30	33	31	34	32	39	33	39	33	36	36	19	3
50.	3 3	36	36	36		32	29	3 3	30	34	31	39	+1	41	35	35	35	3.0	3
630	38	38	34	31		33	30	33	31	34	32	37	+1	41	36	35	35,	* 5	3
800 1000	39 36	34 33	32 32	33 34		31 32	30 29	32 31	32	35 33	36 33	39 37	49 33	40 39	35 36	34 34	34 34	39 39	3
1250	36	33 34	33	33		33	29	31 33	31 31	33	32	36	33	38	35	34	34	77	3
1600	- 20 4 ti	37	37	35 35		35	30	33	31 34	33 34	32	36	37	37	35	33	3*	3 °	Ĺ
2000	36	36	36	33		32	29	24	30	34	30	32	31	33	3 n	3.3	31	40	4
2500	31	29	28	30		28	23	23	24	29	2.6	30	3)	30	33	31	*1	₹9	7
3150	31	25	23	25		22	20	22	25	7 D	27	29	27	27	33	31	31	37	· ·
+30 ú	31	25	25	25		22	20	24	23	31	28	29	27	27	35	37	3.3	7.0	7
5000	29	24	26	24		21	19	22	26	27	35	28	2.	27	32	30	30	10,	
6300	30	28	27	25		24	22	23	29	28	24	27	25	25	31	٤Ğ	29	3 4	7.
5000	35	34	30	29		29	27	26	31	30	25	31	23	25	31	58	25	32	
10000	26	23	22	23		15	19	18	23	27	ži	ŞĢ	21	27	27	23	. 3	27	2
											- •								
OVERALL	70	72	69	65	70	56	. 68	67	٥7	57	t. á	ون	e i	áf	6.5	68	ьf	75	7

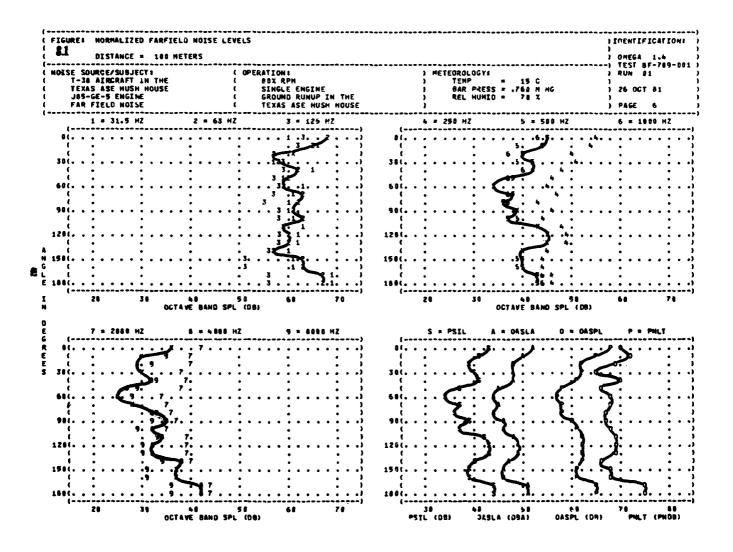
LEVEL CORPECTED TO REMOVE BACKGROUND/ELECTRONIC NUISE.

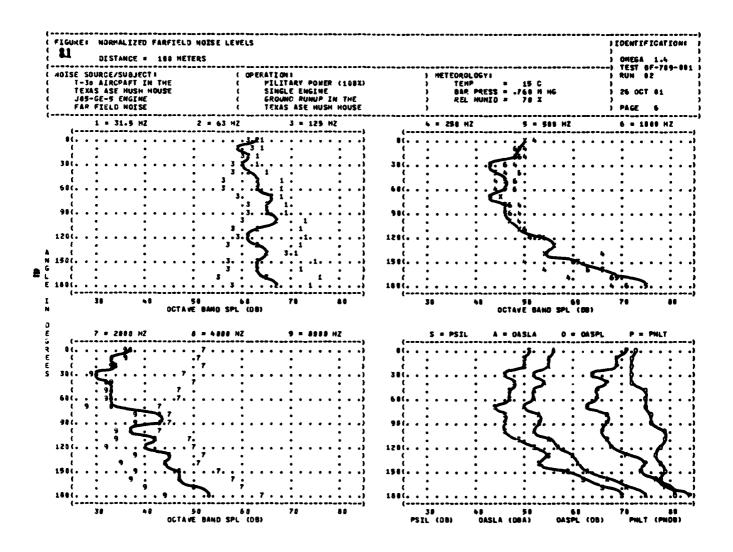
8.2 DISTRIBUTE SOURCE THE SALE ASE DESCRIPTION OF THE SALE	RAFT IN HUSH HO	TI THE	0 MET		HEPATION HILITA	RY F	INE	(100%)) H))	TEM!	ROLOGY PRESS HUMIN	=	29 C '43 M 67 %	нз)	OMEGA TEST PUN 26 OC	9F-70 02	
FAR FIELD				ì	TEXAS					í	NC L	nonz.	-	01 ^		•	PAGE	2	
FREG								AN	isi F	OFGR	EES)								
(HZ)	a	10	20	3 C	40	50	ь0	70	50	90	100	110	123	130	140	150	163	170	180
12.5	71	ь8	67	67	66	73	76	63	7 a	76	72	73	73	70	69	69	69	71	7:
16	bá	÷5	67	57		67	67	67	71	71	72	73	73	71	71	69	70	70	7
20	81	62	53	63		68	6.8	67	70	70	71	73	72	70	69	73	71	74	7
25	53	5ć	56	59		65	65	64	57	57	71	70	71	69	6.6	73	68	74	6
31.5	5.9	57	27	56	59	61	6.1	>9	51	61	67	55	65	56	65	67	68	68	7
4 0	61	62	ö 1	59	59	60	L O	64	51	61	64	62	62	64	€2	65	65	66	6
50	60	55	58	55	55	59	59	63	59	59	60	59	55	68	61	68	6.0	53	6
63	56	53	56	55	•	58	53	61	58	58	59	59	53	58	6.0	>7	E7	59	5
9 G	58	55	5 b	53		55	55	59	52	62	65	57	56	56	59	52	55	54	5
130	59	59	57	55		53	53	58	29	59	58	57	57	54	64	54	5+	53	5
125	55	>8	56	55		52	52	52	56	56	55	51	53	52	64	51	53	50	5
150	51	40	46	46	_	44	44	47	70	50	50	47	49	51	62	48	46	43	,
2 G C	45	45	45	44	-	41	41	43	45	46	45	45	47	52	62	47	48	+5	٠
25 0	+ 3	46	46	44		40	40	40	44	44	44	44	47	52	63	44	49	5?	-
315	4 Ó	→2	+2	38		34	34	34	39	39	41	44	43	47	56	43	50	56	- 1
+u0	4 4	41	40	35		35	35	3.7	30	39	41	43	45	50	51	52	58	6.	٠.
500 630	4 °	46	49 63	39		+2	42	39	+1	41	42	43	49	51	49	57	62	64	Ĭ
900	43	44 41	46	3 d 3 b		43	43	39	+3	+3	43	44	43	51	49	56	62	64	7
1000	4 4	41	43	- 3 B	-	41	41 42	39 39	44	44 41	43 42	45 45	50 48	52 52	49 48	56 55	58 59	65 63	6 6
1256	•7	45	43	÷ 3		44	46	41	42	41 42	42	45	47	50	49	55	57	60	6
1600	51	.0	•9	45		45	45	41	41	41	40	45 45	67	49	48	52 52	55	57	6
2300	44	46	47	42		41	41	38	39	39	39	44	44	47	47	50	52	55	5
2500	30	37	44	37		36	36	31	38	38	35	40	42	43	42	45	47	51	ś
3150	3.2	28	36	26		29	24	24	39	39	33	38	33	42	43	43	45	48	5
4000	3.2	27	29	24		21	27	28	37	37	31	35	3+	40	38	41	40	44	4
5033	31	26	26	24	25	28	28	26	37	37	30	35	32	36	35	39	38	41	4
6398	31	30	29	24	27	20	28	25	35	35	29	31	23	36	33	37	36	39	4
- 00 C	35	35	32	27	31	37	30	25	35	35	30	30	23	34	31	34	31	36	4
10000	27	26	25	21	24	25	26	21	31	31	31	29	25	31	25	28	25	3.0	3.

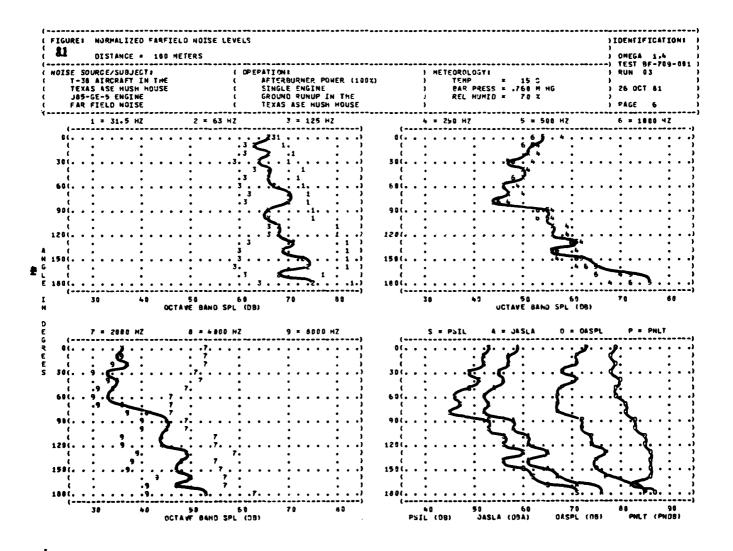
LEVEL CORESCIED TO REMOVE PACKGROUND/ELECTRONIC NOISE.

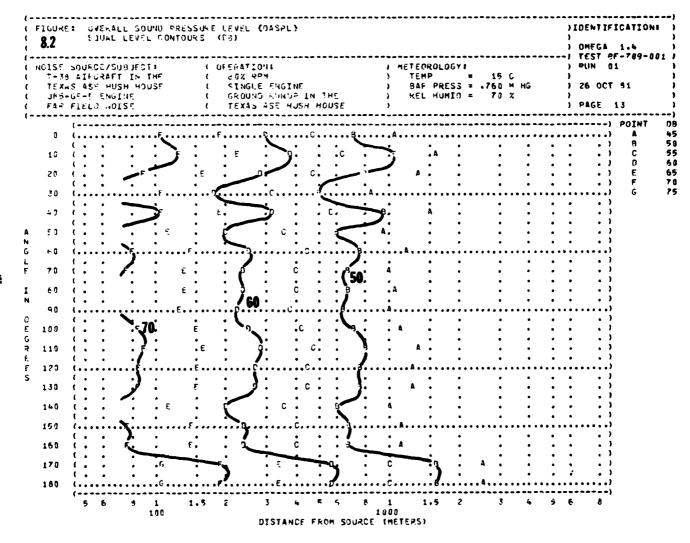
OISE SOU		ECT:	00 MET	(0	PERATIO) H	ETEOR	ROLOGY	•)	OMFGA TEST RUN		
-	RCRAFT I SE HUSH			(AFTERS SINGLE			ER (1	10%)	}	TEM	PRESS		29 C	ue.	,	26 00	T 41	
	5 ENGINE			`	GROUND			THE		- ;		HUMID		67 %	73	í	20 00	• 71	
	LO HOISE			Ċ)				•		ì	FAGE	2	
FREG								Δ.	iG. F	(DEGR	FFS)								
(H2)	í.	18	20	30	₩ 0	50	60	70	00		100	110	120	130	140	150	160	170	160
12.5	74	73	73	73	75	71	73	73	72	77	77	77	77	76	77	78	75	77	78
16	73		72	73		74	71	76	74	77	77	76	76	7.8	77	78	7.6	76	79
20	63		72	70		72	73	75	76	7 a	76	81	81	άĎ	79	76	79	75	6 (
25	63	• -	57	65		73	71	74	72	73	73	77	77	79	ė 0	9.0	7.5	74	7
31.5	6+	62	67	5	68	45	66	64	67	58	68	74	7 →	76	75	76	77	7.3	79
40	6.5	63	65	64	65	65	67	58	67	66	66	71	71	71	73	74	7 t	69	70
50	64		63	60		63	65	67	67	62	62	65	55	69	68	72	77	56	7
63	5 1		61	60		62	€1	64	63	61	61	61	61	5F	61	55	67	62	F-7
80	59		59	58		59	59	65	62	59	59	61	61	64	58	52	61	59	€ :
100	63		58	55		56	56	58	57	60	60	64	54	59	57	56	5 é	E 6	5.9
125	63		56	55		58	57	59	58	6+	64	61	61	56	55	<i>j</i> 6	54	53	€ (
160	57		51	50		51	50	51	49	58	58	57	57	55	53	23	5.3	5=	E 7
200	5 2		45	46		47	46	47	44	52	52	55	55	57	55	53	55	55	56
25 0	5 2		50	50		45	44	44	43	52	52	55	55	59	59	53	57	45	6 f
315	51		44	41		37	39	41	38	58	50	÷9	49	55	52	+8	56	58	65 65
400	47		44	40		42 47	36 43	39	38	51	51	50 52	>0	54 57	51	52 57	\$ e 6 e	58 68	77
500 630	51 47		4.8 4.8	44 41		43	40	44 43	40 40	51 50	51 50	51	52 51	37 35	51 52	59	61	65	7
800	4.5		43	40		42	41	43	40	49	49	51	51	55	51	57	50	6.3	70
1000	45		46	43		43	40	41	39	47	47	51	51	56	51	56	59	5 G	67
1250	49	-	48	45		45	43	42	41	47	47	51	51	54	52	56	56	55	£ à
1600	51		50	47	• •	46	44	43	42	46	46	51	51	57	52	53	54	54	F
2000	47		49	45	-	43	4.0	40	41	43	43	49	43	54	50	51	52	51	5.8
2500	37		43	42		39	34	34	36	41	41	47	47	49	46	4€	49	46	53
3150	31		31	3 0		31	30	32	36	41	41	42	42	47	**	44	47	44	e ;
4300	3 0		32	27		27	27	31	36	39	39	37	37	42	42	41	44	42	47
5000	31		34	26		28	26	39	35	38	38	36	36	39	40	39	L 3	40	44
6300	3 2	31	30	26	28	27	26	28	33	38	38	32	32	36	36	36	41	37	39
8 8 8 8	35	34	32	28	31	28	28	28	33	37	37	34	34	34	33	33	38	3.6	37
10000	21	27	28	23	28	23	22	23	30	32	32	27	27	31	27	27	37	31	3.0

LEVEL COPPECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.



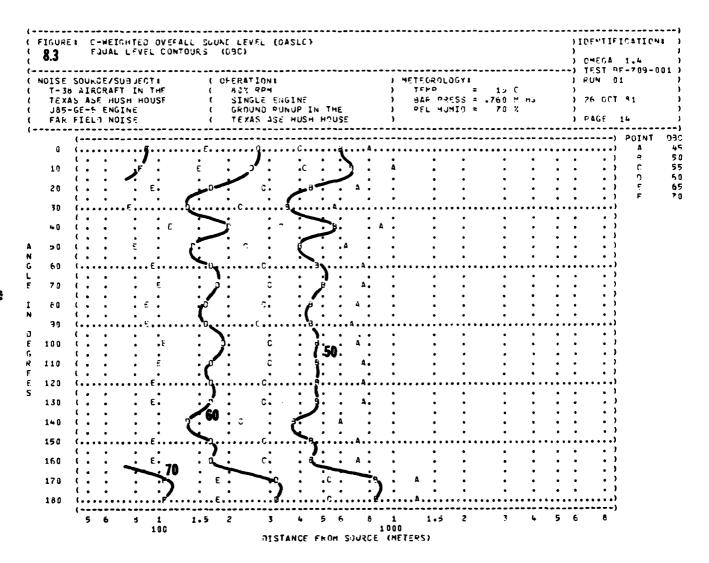




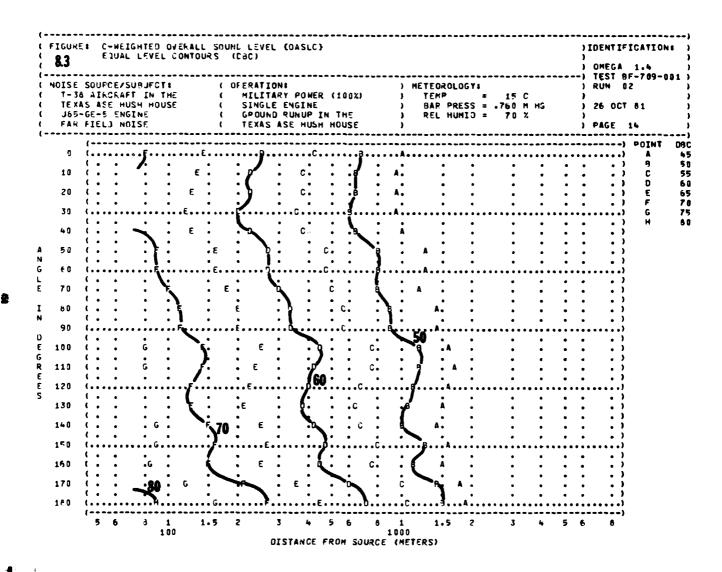


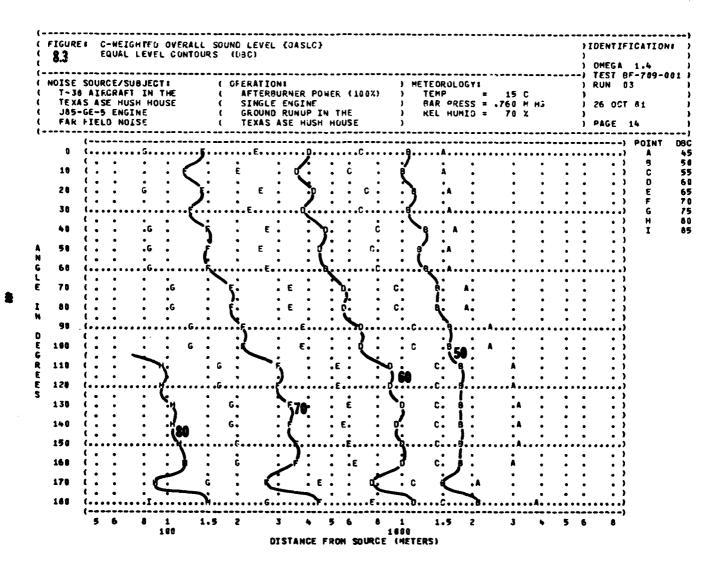
OISE SOURGE/SUBJECT: T-38 AIRCRAFT IN THE TEXAS ASE HUSH HOUSE J85-GE-5 ENGINE FAR FIELD MOISE	(OFERATION: (MILITARY POMER (100%) (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY:) TEMP = 15 C) BAR PRESS = .760 M MG) REL HUMID = 70 X) OMEGA 1.4) TEST 9F-789-0) RUN 02)) 26 OCT 81)) PAGE 13
0	E C C C C C C C C C C C C C C C C C C C		POINT A B C D F B B B B B B B B B B B B

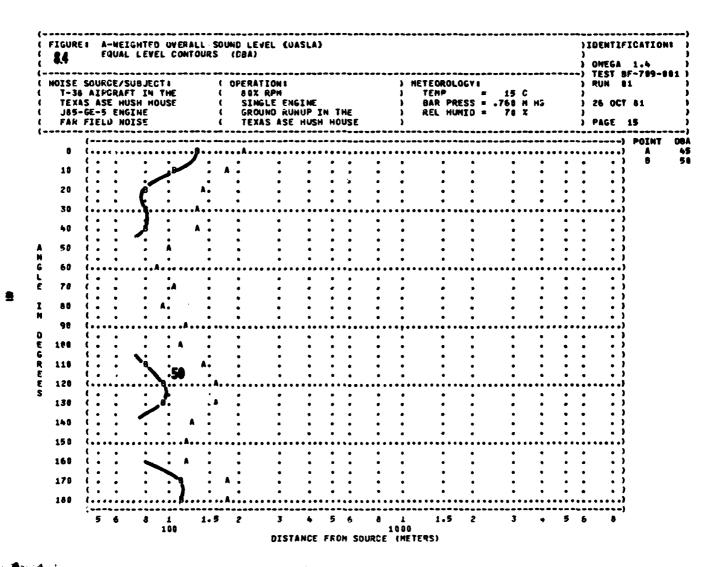
.

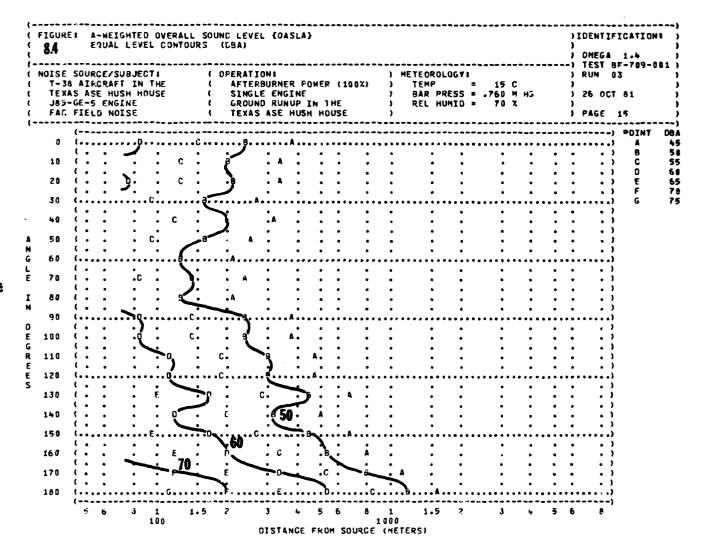


ŝ

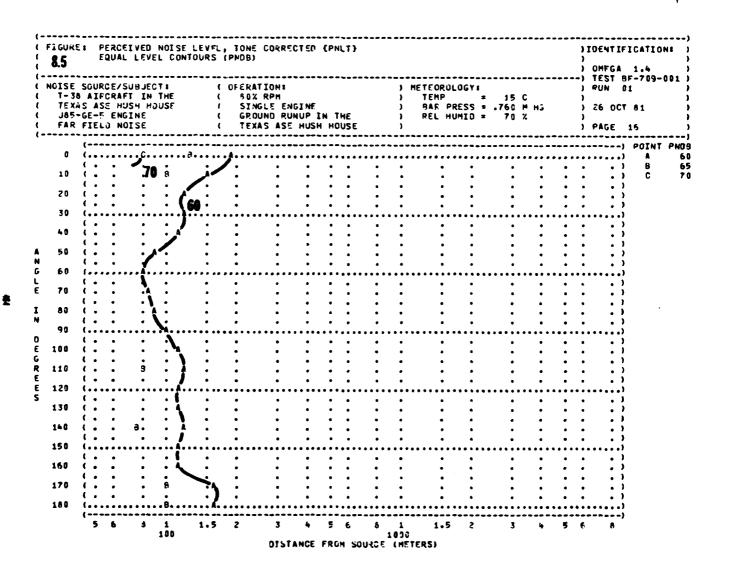


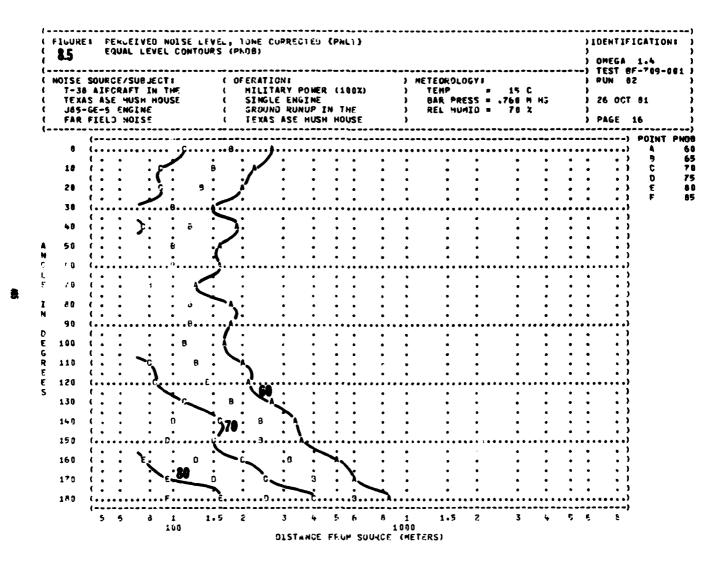






ŧ

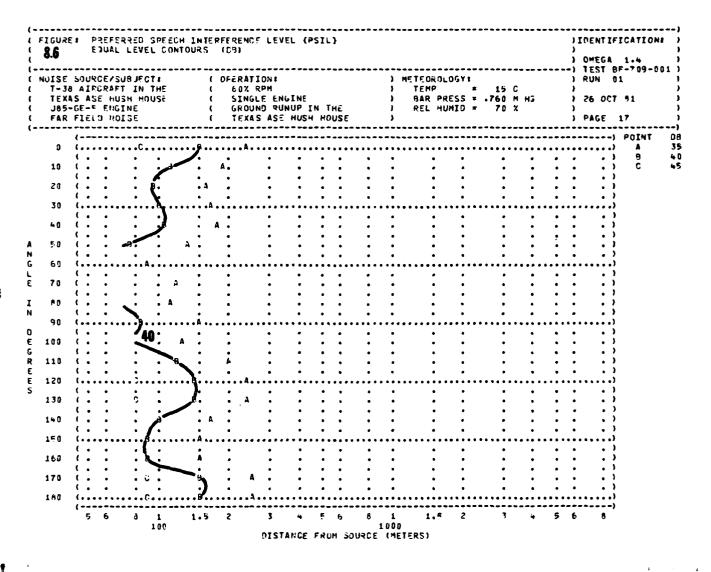


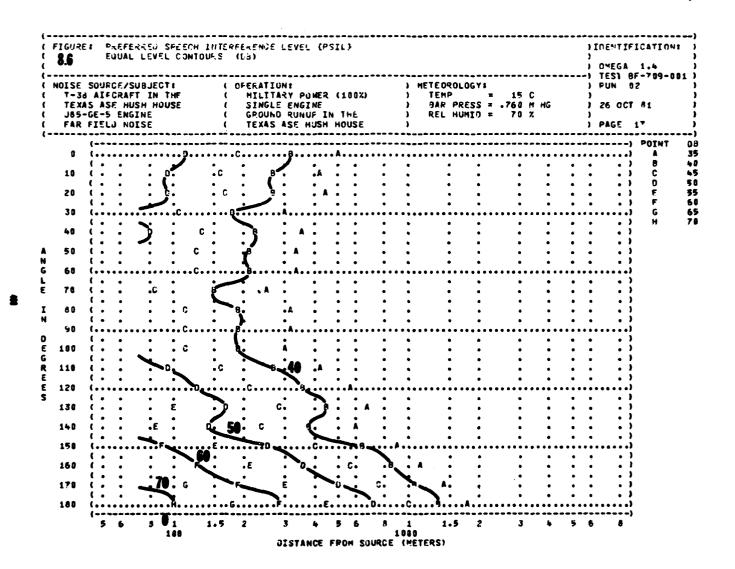


ISE SOURCE/SURJECT: T-38 AIRCRAFT IN THE TEXAS ASE HUSH HOUSE J85-GE-F ENGINE FAR FIELD NOISE	(OFERATION: (AFTERBURNER POWER (100%) (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY:) TEM3 = 15 C) BAR PRESS = .760 M H5) REL HUMID = 70 %) OMEGA 1.4) TEST 9F-709-) RUN 03)) 26 DCT 81)) PAGE 16
0 (70: B		

.

· - - ·





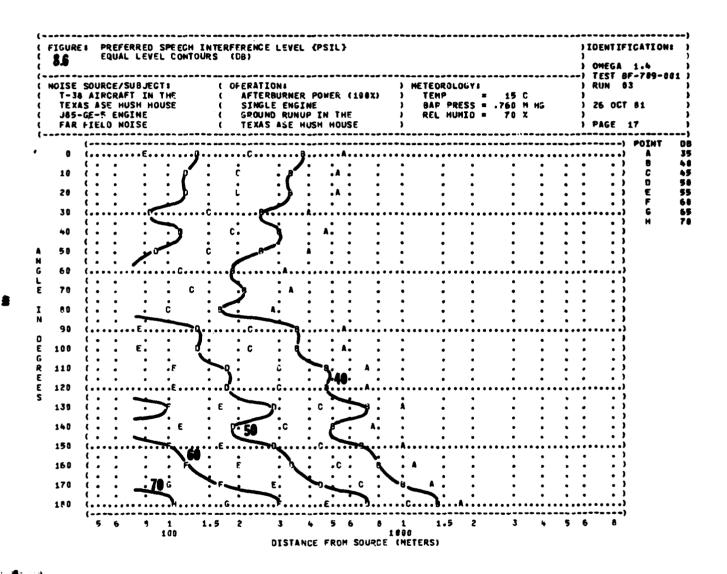


FIGURE: MAXTHUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

27 EQUAL TIME CONTOURS (MINUTES)) I DENTIFICATION: 8.7 OMEGA 1.4 TEST BF-709-001 NOISE SOURCE/SUBJECT! (CFERATION!) METEORULOGYI RUN 01 TEMP = 15 C BAR PRESS = .760 H H3 T-38 AIFCRAFT IN THE TEXAS ASE HUSH HOUSE J8>-GE-5 ENGINE 80% RP4 SINGLE ENGINE GROUND RUNUP IN THE 26 OCT 81 REL HUNID = 70 % TEXAS ASE HUSH HOUSE PAGE 7 FAR FIELD NOISE 10< 20 < 36< 40< PERSONNEL HAY BE EXPOSED UP TO 960 MINUTES PER DAY AT ALL DISTANCES FROM SOUNCE EQUAL TO OR GREATER THAN 50< 75 HETEKS FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT) £3< UNDER THE FOLLOWING FAR PROTECTION CONDITIONS: 70< NO PROTECTION 80 < HINIHUH OPL EAR HUFFS 90 < 0 AMERICAN OPTICAL 1/00 EAR HUFFS 100< 110< V-51R EAF PLUGS COMFIT THIPLE FLANGE EAR PLUGS 1204 H-133 GROUND COMMUNICATION UNIT 140 < 1504 160< 170< 180 < 3 4 5 6 8 1 1 1000 DISTANCE FROM SOURCE (METERS)

á

DISTANCE FROM SOURCE (METERS)

â

=

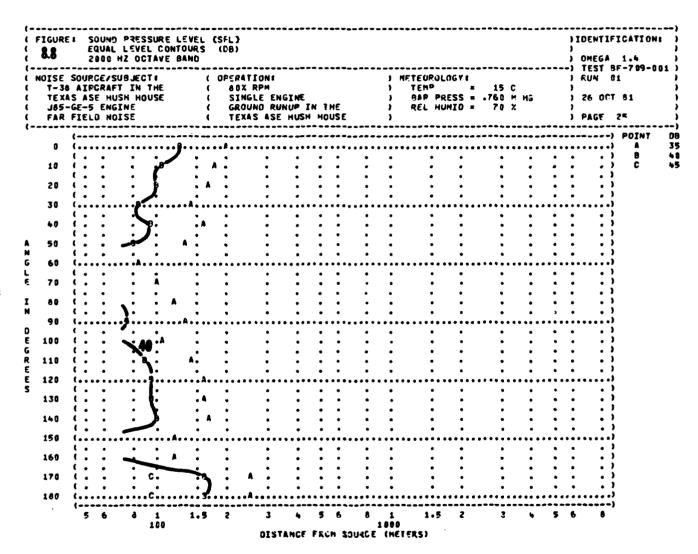
=

AD-X118 773	AIR FORCE AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTETC F/G 20/1 USAF BIOENVIRONMENTAL NOISE DATA MANDROOK. VOLUME 172. HUSH-HOUETC(U) JUL 82 R A LEE, T H RAU. C JONES AMRL-TR-75-50-VOL-172													
6- 9	AMRE-TR-75-5	10-V0[-172				NI								
18772														
	├	┼ ├-												
						i i								
			į											
	i i													

•

\$

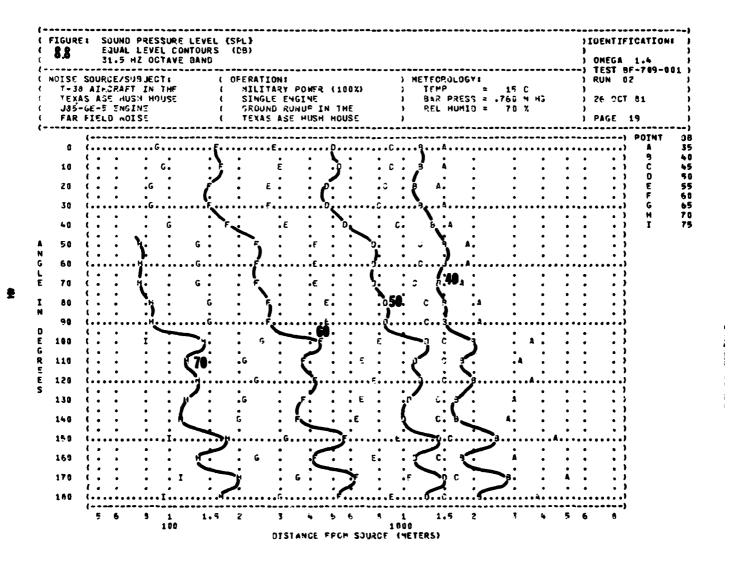
ŝ



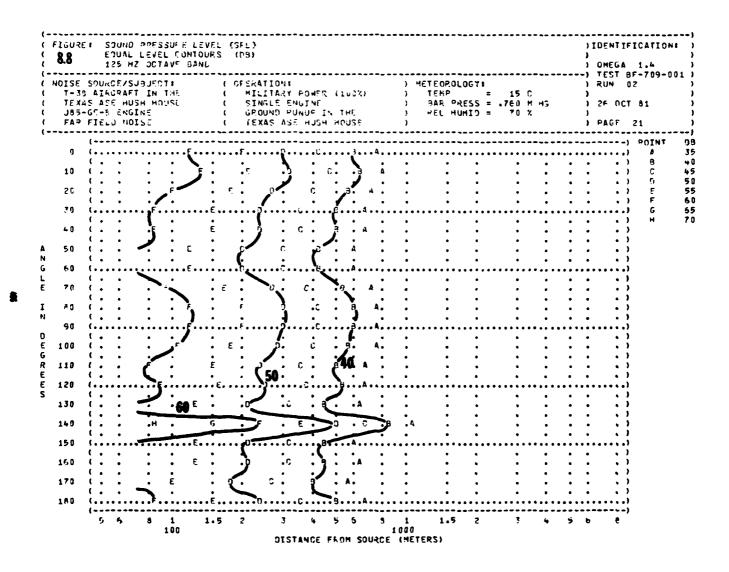
3.3	EQ!	UAL L Bo Hz	OCT/	CONTO	URS	1)	B)													OME	GA	1.4 f-709-0
TEXAS	SOURCE AIRCE S ASE GE-5 E FIELD	RAFT HUSH ENGIN	IN TI HOUS E	I HE SE	(ERATION 80% RPN SINGLE GROUND TEXAS	12E H	NE IP IN IUSH	TH: HOU	E S E)) 1	METEC TEM BAR REL	ROLOG IP PRES: HUMI	Y: S = O =	15 -768 70	C H H	5 		RUN 26 PAG	GCT	81
0	()	POINT
-	(.	•		•	•	•		•	•	•	•	•		•	•	•		•	•	•	. ;	6
10		•	•	•	:	•	,		•	•	•	•	•		•	:		•	:	•	: ;	·
20	(. (.	•	•	•	•	•	,	•	•	•	•	•	•	•	•	•	•	•	•	•	• ;	
30	(•••»	• • • • •	•	• • • • • • • • • • • • • • • • • • •	••••	•••	• • • • • •	• • • •	••••	•••	• • • • •	• • • •	• • • • • • • • • • • • • • • • • • •	•	• • • •	• • • •	• • • •	• • • •	• • •	• • • • • •	• • •	
40	(.	•	•	•	•	•		•	•	•	•	•	•	•	•	•		•	•	•	• ;	
50		•	:	•	:	:	,	•	:	•	•	:	,	:	•	:		•	•	•	. ;	
50	· · · ·	• • • • •	•	• •••••	•	•	••••		•	•••	•	•	• • • • • •	•	•	•	• • • •		•	•	;	
70	(.	•	•	•	•	•	,	•	:	•	•	•	•	•	•	:		•	:	•	• ;	
80	(.	•	•	•	:	:			:	•	•	•	•	•	•	•		•	:	•	.)	
90	(.	•		•	•				•	•	•		, 	•	•		• • • •		•		• ;	
180			•	•	•	•		•	•	•	•	•		•	•	•		•	•	•	.)	
	} :	•	•	•	:	:	,		•	•	•	•		:	•	:		•	•	•	. ;	
110		•	•	•	:	:		•	•	•	•	•	•	:	•	•		•	•	•	.;	
120	(.	A •	•	•••••	•	•••	• • • • • •	• • • • •	•	•••	• • • • •	•	,	•	• • • •	•	••••	• • • •	•	• • • • •	• • • •	
130	(.	. A		•	:	•		•	•	•	•	•	•	•	•	•		•	:	•	• ;	
140	(.	:]	>	• 1	١.	•		•	•	:	:	•		•	•	•		•	:	•	. ;	
150	į	•	••••	A.	••••	•••	• • • • • •	•	••••	•••	••••	••••	•••••	•••••	••••	••••	••••	•	•••	••••	••)	
160	: :	•	: 40		:	:		•	:	:	•	:		:	:	:		•	•	•	. ;	
170		•	Ç	-	•	A.		•	•	•	•	•	,	:	•	•		•	•	•	: ;	
180	(. (ċ	: <i>]</i>	, . 	٠	••••	• • • • • •	•	••••	• • • • • •	•		•	•	•	••••	•	•		• • •	
	(f	8	 1	1.5	2		 3	<u> </u>	5	 ƙ	8	1 :	 l.5	 2	3		 4	5	 ƙ) E	

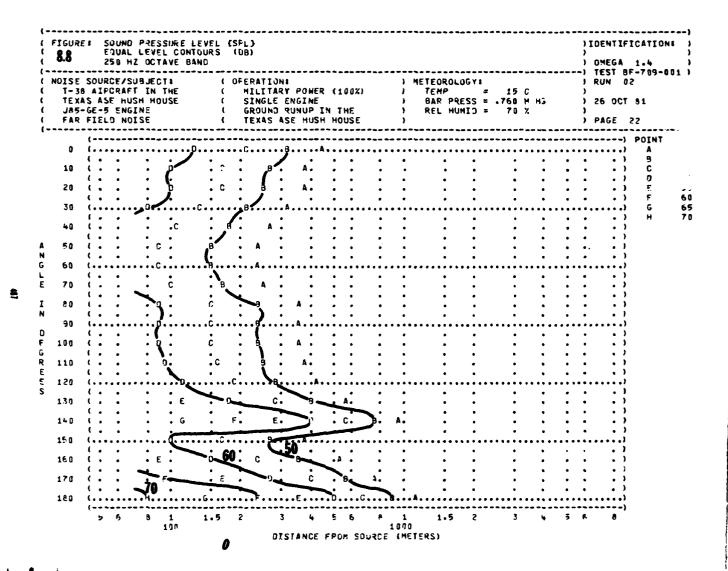
.

ŧ

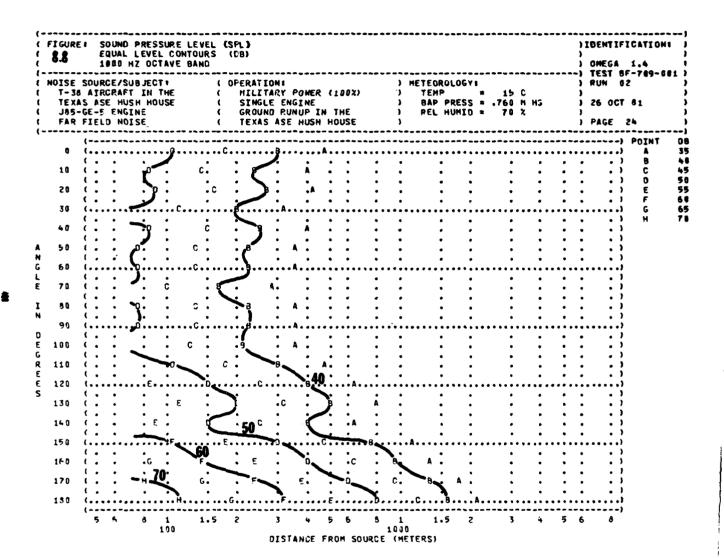


63 HZ OCTAVE BA OISE SOURCE/SUBJECT: T-38 AIRCRAFT IN THE TEXAS ASE HUSH HOUSE JBS-GE-5 ENGINE FAR FIELD NOISE	(OFERATIONS (HILITARY POWER (188 (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUS) BAR PRESS = .760 M 45) REL HUMID = 70 %) OMEGA 1.4) TEST BF-709-01) RUN 02)) 26 OCT 81)) PAGE 20
10			POINT A B C D F C D F C D F C D F C D F C D F C D F C D C D C D C D C D C D C D C D C D C D C D C D C D C D C D C D C D C D C D D



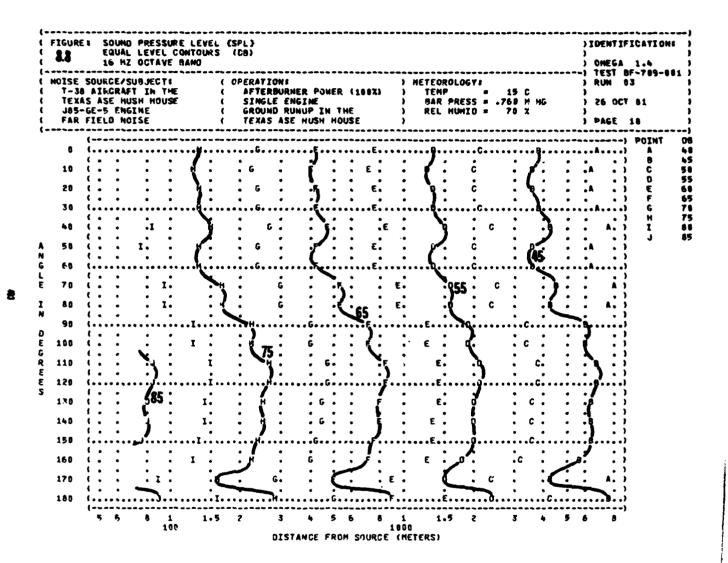


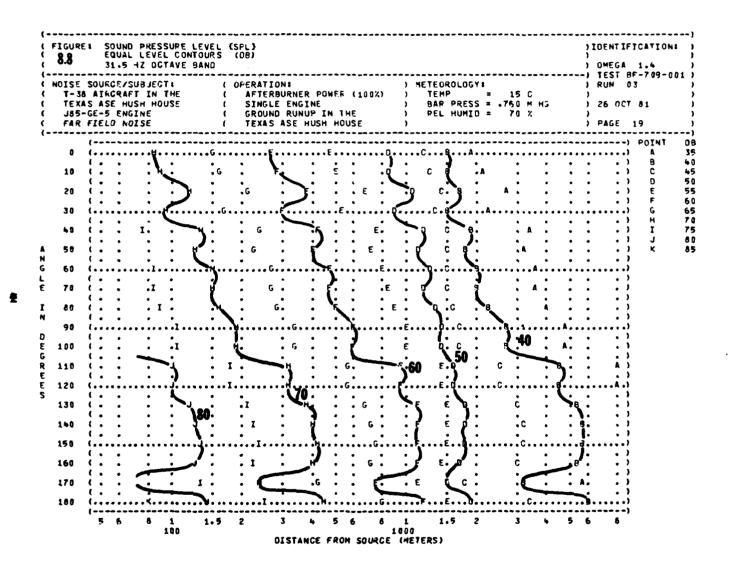
T-38 TEXA J85-	SOURCE/SU AIPCRAFT S ASE HUS GE-F ENGI FIELD NOI	IN THE H HOUSE NE		((SING GROU	IONS TARY LE EN ND RU S ASE	GINE NUP I	N TI	ŧΕ)	TEOROL TEMP BAR PR REL HI	RESS	= 15 = .760	s) OME() TEST) RUN)) 26 ()) PAGE	8F- 02 CT 6	1
9 10 20 30 40 50 60 70 80 90 110 120 130 140 150		G C C E E E	c c c			A . A . A . A	A											OINT BCDEFGHI
178 180	(,	H-		5		F.G.		E.		D E	.c) c.	\	4	•		•}	

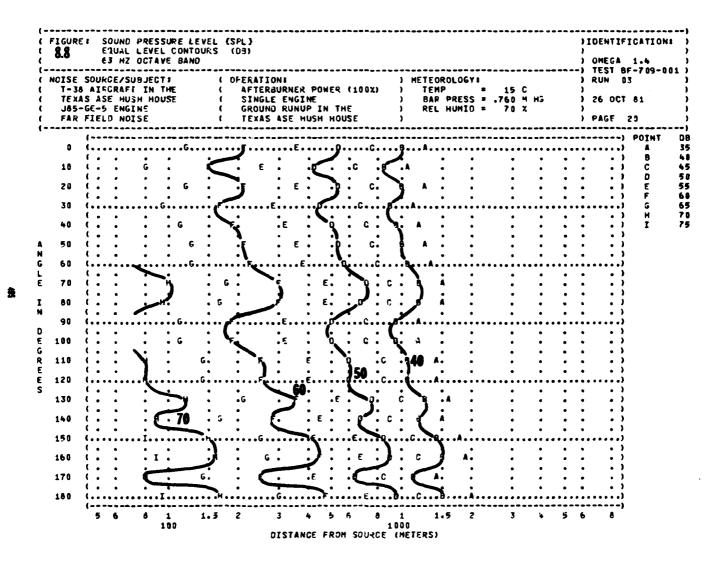


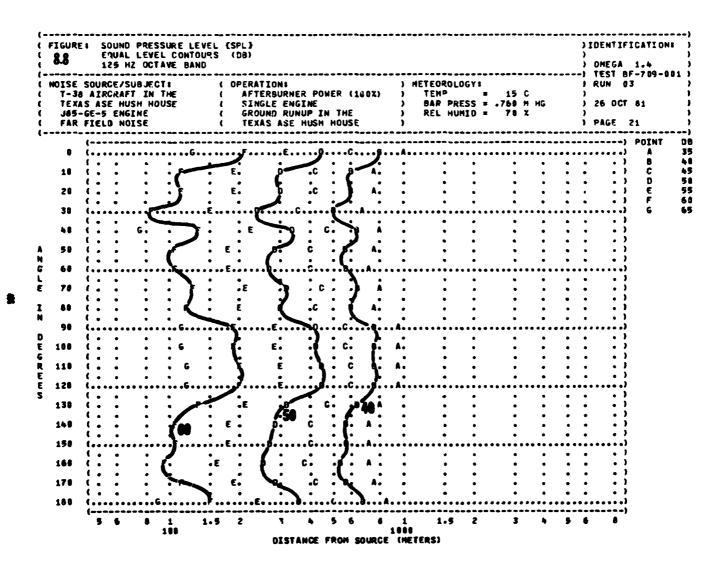
T-38 TEXA: J85-	2030 HZ OCTAVE SOURCE/SUBJECT: AIRCRAFT IN THE S ASE HUSH HOUSE GE-5 ENGINE FIELD NOISE	(OPERATION: (MILITARY POME (SINGLE ENGINE (GROUND RUNUP (TEXAS ASE HUS	R (100%)) IN THE)	ETEOROLOGY: TEMP = BAR PRESS = REL HUMID =	15 C .760 H H3 70 %) PUN)	8F-709-00 02 CT 81
0 10 20 30 40 50 60 70 80 90 110 120 130 140 150	G		A				-) POINT -) A -) G -) G -) G -) G -) H

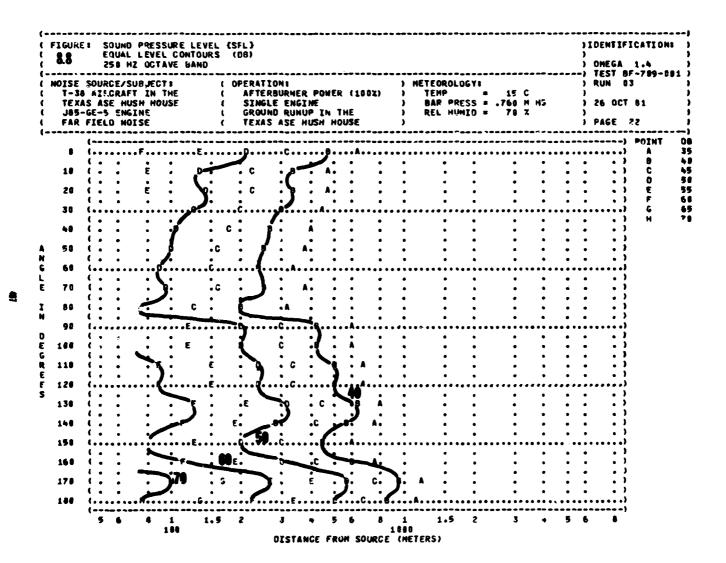
	NGINE HOISE		- (SINGLE	ENGI RUNU	P IN	THE		TEM BAR REL	= 1! S = .76))	RUN 26 OC PAGE	
10 (10 (10 (10 (10 (10 (10 (10 (10 (10 (A C C	40	A										POINT A B C D E))))))))))))





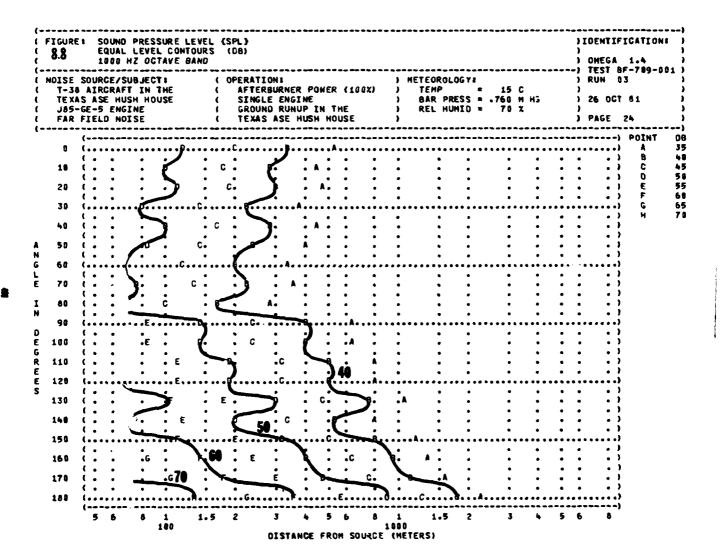


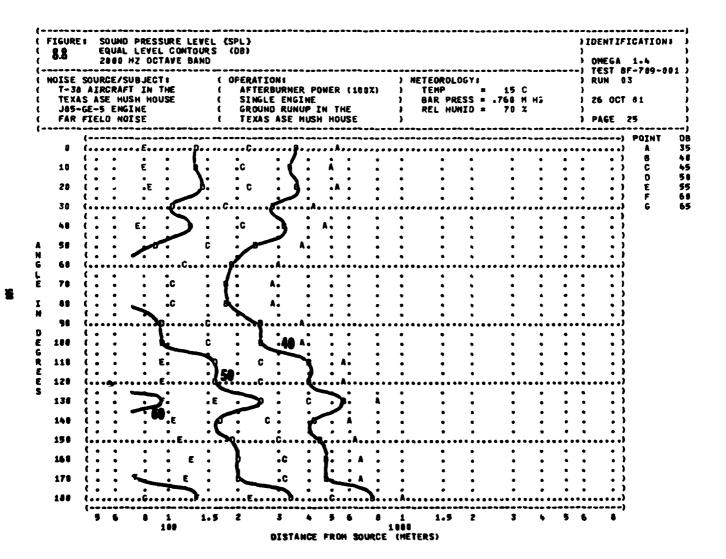




T-38 TE XA: J85-	508 HZ OCTAVE SOURCE/SUBJECT: AIRCRAFT IN THE S ASE HUSH HOUSE GE-5 ENGINE FIELD NOISE	(OPE	RATIONS FTERBURNER F INGLE ENGINE ROUND RUNUP EXAS ASE HUS	IN THE) H	ETEOROLOGY: TEMP : BAR PRESS : REL HUMID :	.768 H	нз	 BF-789-06 83 T 81
e 10 20 30	{		6 , , ,			•	•		POINT B C D E F G G F G F G F G F G F G F G F F
40 50 60		c		. A			•) H) I))
76 80 90	(A: A:	· · ·			•)))))
110 120 130		E		\	A		•		; ; ; ; ;
148 158 168		50	50 , °				•)))))
178 188			6		D	C C	A)))

.____





¥

TABLE 9.1

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS TF41-A-1 ENGINE IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-711-001 (Engine For The A-7 Aircraft)

Engine Operation	, s	ingle Engine
85%	85	% RPM
	3401	LBS/HR FF
	5118	LBS THRUST
95%	95	% RPM
	7409	LBS/HR FF
	10992	LBS THRUST
Military Power	98.5	% RPM
-	8903	LBS/HR FF
	12854	LBS THRUST
Meteorology		
Temperature	28	С
Bar Pressure	.747	M Hg
Rel Humidity	79	%
Wind - Speed	Calm	
- Direction		

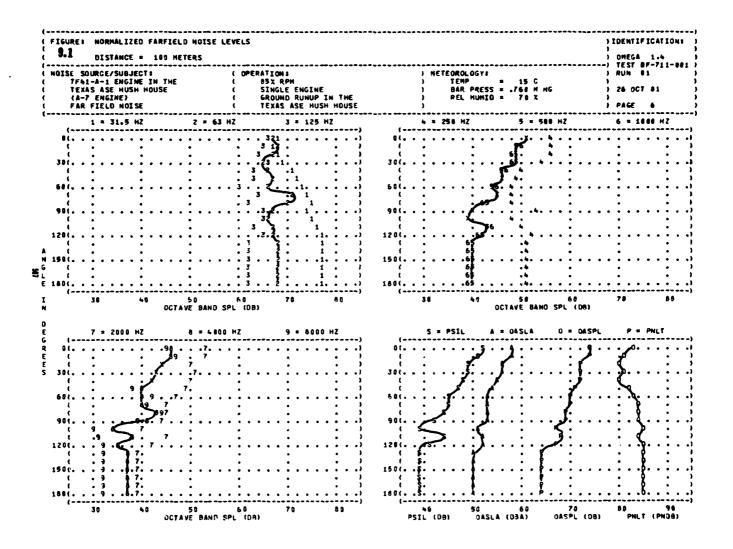
92 1/3	SURED S OCTAVE TANCE	E BANG	3)	DENTI OMEGA TEST	1.4	•
OISE SOURCE	/SUBJE	CTI		(OF	ERATI	ONE) 4	ETEO	ROLOGY	1)	RUN	01	
TF41-A-1 S	NGINE 1	EN THI	Ε	(85% R	PH)	TEM	P	=	28 C		•			
TEXAS ASE		JUSE			SINGL)	SAR	PRESS	= .7	47 1	HG)	26 00	T 81	
(A-7 ENGIN							UP IN)	REL	HUHIT	=	79 %)			
FAR FIELD	NOISE			(TEXAS	455	HUSH	HOUSE))	PAGE	2	
FREQ								Δ:	IGI F	(DEGR	FFCI								
(HZ)	9	10	20	30	49	5 0	60	70	86	90	100	110	120	130	140	150	160	170	16
			_		_		_			• -	• • •			• • •					
12.5	80	77	77	77	76	76	76	77	79	78	77	78	79	76	78	78	78	78	71
16	77	75	74	76	75	7 à	78	80	77	79	61	79	80	80	80	80	83	8.9	8
20	73	72	72	75	73	76	77	78	75	79	79	78	73	79	79	79	79	79	7
25	63	62	64	64	66	70	70	71	73	72	74	74	7+	74	74	76	74	74	7
31.5 40	63 62	56 65	60 54	63	03	65	65 67	66	66	56	68	71	72	72	72	72	72	72	7
50	D+	63	63	64 62	66 63	64 64	01 04	69 68	67 96	65 63	65 61	66 63	63	69 66	69 66	69 66	69 66	59 66	61
63	61	63	60	60	60	62	61	67	65	61	59	61	6+ 61	62 62	62	62	62	62	6
80	61	62	62	59	59	59	56	64	62	63	62	62	60	59	59	59	59	59	8
100	63	62	62	63	59	60	56	61	59	63	61	60	62	59	59	59	59	59	5
125	P 2	60	56	61	58	59	55	59	57	60	62	60	95	56	58	58	56	54	5
160	56	56	54	54	56	52	£3	54	51	55	54	52	54	52	52	52	52	52	5
230	52	51	51	* 9	4.7	45	44	45	45	žĺ	45	47	46	49	69	49	49	49	4
25 0	51	ŝ2	53	50	46	44	43	43	- 44	47	44	45	47	47	47	47	47	47	4
315	49	48	49	47	42	40	41	41	41	49	38	41	45	40	40	40	40	40	41
488	46	44	43	43	39	37	37	38	39	37	35	4 0	35	36	36	30	36	36	3(
500	45	45	45	45	41	42	40	41	38	34	33	38	37	34	34	34	34	34	34
630	46	44	42	44	41	43	39	41	33	35	34	38	35	34	34	34	34	34	34
500	43	42	41	42	40	40	49	33	37	35	35	37	35	33	33	33	33	33	3
1000	43	43	42	42	41	43	38	39	36	34	34	42	36	33	33	3.3	3 5	33	3
1250	4 5	46	44	44	44	43	41	41	37	37	34	38	35	34	34	34	34	34	3
1600	49	50	46	47	46	**	4.3	4 B	39	37	33	37	35	34	34	34	34	34	34
2000	45	46	44	44	43	41	33	36	37	35	33	36	35	34	34	34	34	34	3
2500	47	47	45 37	46	46	45	44 35	42	42	42	36	42	33	34	34	34	34	34	34
3150 4000	4 0 35	38 34	37	36 32	37 31	36 30	35	36	38	35	30	35	32	34 30	34	34 30	34 30	34 30	34
5000	37 43	34 45	43	32 41	31 39	3 ý	36	32 37	35	32	27 29	31 30	23 29	30	3 0 3 0	30	30	31	31
6300	41	45	42	40	37 39	35	36	3 r 3 i	+0 48	36	27	28	29	29	29	29	29	29	29
8000	42	44	39	38	39	37	39	39	42	36	27	28	23	28	28	28	26	28	2
10000	41	42	37	36	36	3+	41	35	40	38	25	25	25	25	25	25	25	24	29
OVERALL	83	81	8.0	61	50	82	82	54	84	85	RS	84	AS	85	85	۵5	85	85	8

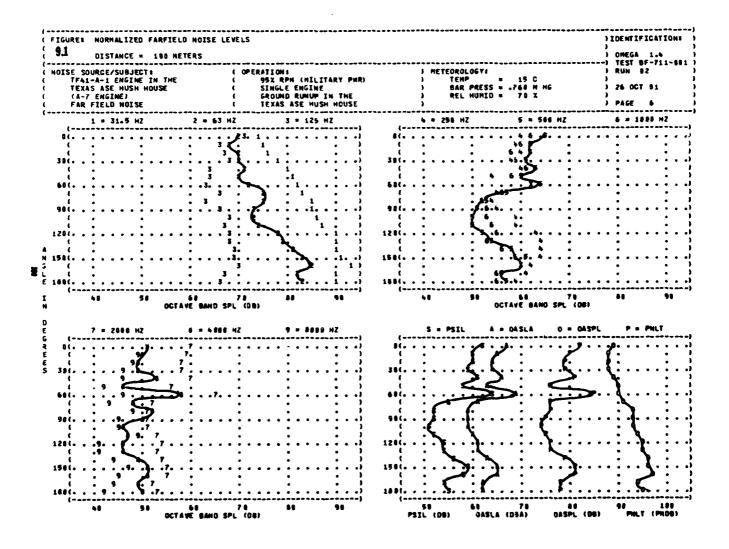
OISE SOURCE		,T :		(0	FERATIO	M E) H	ETEO	ROLOGY) OMEGA 1.4) TEST BF-711-08:) RUN 02					
TF41-A-1 ((95% KP SINGLE			KY PM	2.)	}	TEM	PRESS	= ,	28 C		•	26 DC	· T . A .	
(A-7 ENGIN		,034		ì	GROUNE			THE		`		HUMID		79 %	113	•	20 00	,1 D.T	
FAR FIELD				i						;	,,,,,,			•••		•	PAGE	2	
FREQ									IGI E	(DEGR	FFS)								
(HZ)	σ	10	20	30	40	50	£.D	70	60	90	108	110	120	130	140	150	160	170	160
12.5	85	83	83	84	84	84	79	8>	87	56	85	86	87	86	87	87	87	85	84
16	04	84	84	82		83	84	84	88	88	89	89	6.3	91	91	91	89	87	87
50	80	81	82	83		85	86	85	87	89	86	89	90	39	89	90	89	86	86
25	63	71	72	75		79	8.0	81	83	83	85	84	87	57	86	66	89	86	87
31.5	70	67	68	71		73	73	75	76	77	79	82	84	63	85	67	89	85	89
40	69	72	71	73	75	74	73	75	73	73	73	76	73	81	83	85	87	83	84
50	67	66	òδ	67	70	68	70	74	74	71	70	70	74	77	60	82	83	81	82
63	61	52	62	63	64	64	63	66	67	67	68	70	74	71	73	75	78	75	76
80	65	61	60	62	61	60	60	63	64	67	56	65	69	68	69	7 0	72	69	69
100	68	63	64	65	61	60	59	63	61	54	65	65	65	64	65	67	63	64	63
125	66	61	62	63		53	57	60	58	61	6.3	61	63	62	63	64	6÷	61	61
160	61	59	59	60		55	57	56	54	57	59	59	61	62	62	61	62	60	57
200	56	55	56	54		51	54	52	51	52	57	5€	68	61	60	58	58	59	55
250	56	54	56	55	55	5 Q	58	50	49	51	54	54	59	61	61	61	58	55	54
315	55	53	52	51		45	58	48	44	45	49	49	51	54	55	56	55	53	51
400	56	52	53	51		47	57	47	43	43	46	45	47	50	52	55	55	50	53
500	63	60	59	58	59	57	61	54	49	45	45	45	47	49	53	57	55	50	52
630	59	57	96	56		57	59	53	50	48	45	46	47	48	52	56	55	51	52
800	56	53	52	53		54	58	51	+9	+9	47	47	45	47	51	54	54	50	50
1000	55	54	52 55	53		53	57	49	+6	48	49	49	50	48	51	54 56	54 55	50	50
1250	58 59	77 57	56	55 56		54 54	57 56	51 49	47	48	47 47	50 49	50 50	49 50	52 51	50 52	55 51	50 48	48
1600 2000	5 T	54	52	50 52		49	59	45	45 45	48 45	47	49	49	7 U	71 49	49	51	47	49
2500	40	54 49	46	49		45	63	42	+2	43	43	45	49	46	49	48	48	45	
3150	40	46	45	45		40	57	46	#2 #9	43	43	45	45	42	45	48	48	45	67
4000	42	42	39	40		37	47	39	49	43	40	42	39	48	43	45	45	43	64
5000	46	46	45	43		3 <i>t</i>	43	39	45	43	40	41	39	40	42	46	45	43	41
6300	4.5	47	46	44	. •	33	42	39	45	43 42	39	44	33	38	40	42	42	41	39
5000	47	45	42	42	. •	38	42	41	44	42	38	48	37	38	41	44	43	41	38
10300	46	44	4.0	39		37	42	37	43	49	46	40	35	35	38	41	40	37	35

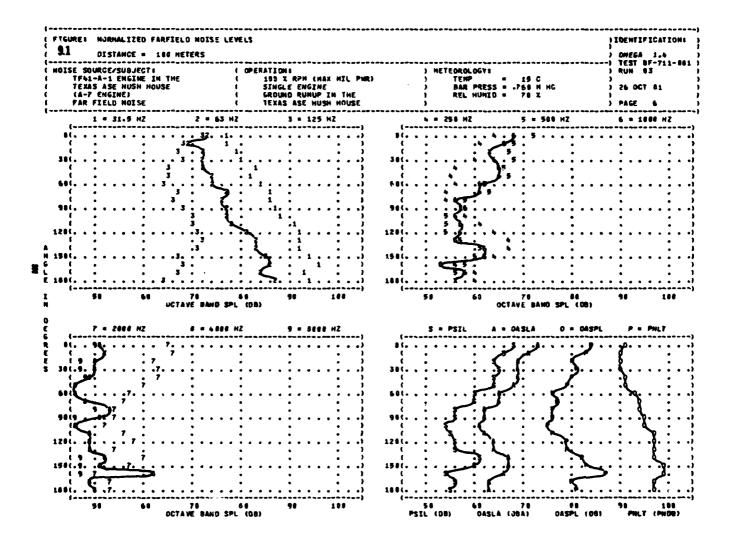
LEVEL CORRECTED TO REMOVE BACKGROUND/ELFCTRONIC NOISE.

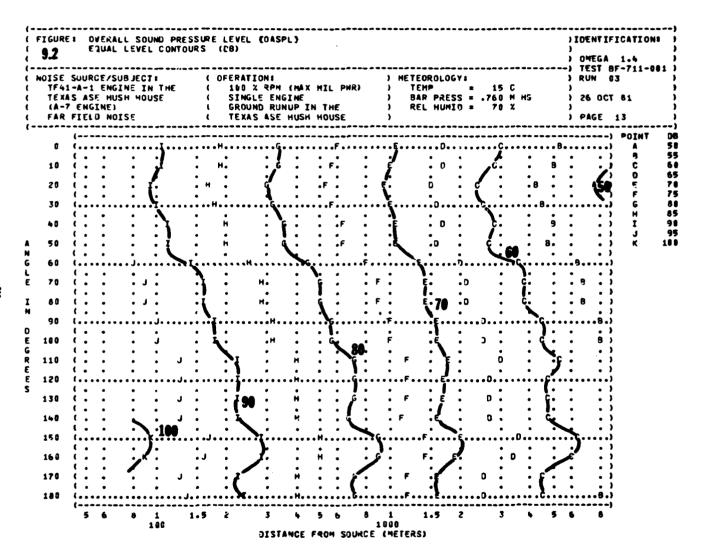
	MEASURED :			SURF	LEVEL	(03)	•)]	CENTI	FICAT	IONS
	CISTANCE		MET)	TEST	_	
	RCE/SUBJE				FERATIO		, u			-		SOLOGY					RUN	03	
	1 ENGINE :			(100 % SINGLE			HIL PI	15))	TEMP	PRESS	= ,	28 C)	25 00		
16 AMS A		0035		ì	GROUND			THE		;		HUMIN		79 %	n.	;	25 170		
	LJ NOISE			i	TEXAS		_			í			_				PAGF	2	
FREQ								AA		(DEG3									
(HZ)	0	10	29	30	40	50	ь0	70	86	90	100	110	129	130	1 4 0	150	169	170	180
12.5	67	86	82	86	96	84	/ 87	87	57	88	90	91	6.5	89	88	90	93	87	89
16	85	86	ВE	83	85	64	68	89	86	90	8.8	90	93	88	91	34	91	58	87
20	8.3	80	84	84	35	87	67	89	89	89	89	91	91	42	90	93	93	92	91
25	73	72	75	77	80	73	82	84	05	85	86	89	90	89	89	89	92	90	9:
31.5		70	70	74	77	76	75	79	78	86	82	84	85	87	06	90	91	97	81
40	72	73	75	74	77	77 73	77	77	75	76	76	80	83	84	86	69 65	69 85	36	81
50 63	7 J 6 S	66 64	71 63	70	71 64	66	73 66	75 69	74 59	75 70	74 72	75 74	73 77	81 76	82 73	76	80	83 78	70
80	65	52	62	62	• •	61	62	66	57	69	69	5 6	73	73	71	70	72	71	7
100	69	64	63	65	62	62	61	64	53	66	67	57	6)	69	68	. i	66	64	6
125	67	63	63	63	68	61	59	62	ьū	53	64	64	65	67	66	62	64	62	5
160	6.3	68	59	50	54	58	57	56	56	58	60	60	63	65	63	59	52	59	56
200	58	54	56	56	52	52	52	51	50	54	55	58	61	ò4	63	57	50	58	5
25 C	5.6	55	58	55	52	50	51	50	49	52	52	55	61	62	64	62	5?	55	56
315	60	58	58	54	51	47	48	47	46	47	47	51	53	54	56	56	5	52	5
400	66	62	61	62	58	55	55	53	47	49	46	50	49	52	57	54	52	50	51
500	67	ó4	63	64	51	62	5.8	59	53	52	49	48	49	52	56	54	53	52	E (
630	67	52	52	62	62	64	58	59	55	55	> 8	49	50	5?	55	35	53	52	5:
500	63	55	58	59	59	61	57	56	53	54	52	50	51	51	57	55	43	52	F
1000	61	59	57	58	58	58	53	54	49	51	49	51	52	51	56	55	4.8	53	5
1250	65	64	60	66	ó.	59	56	56	51	>3	50	53	53	52	56	59	46	53	51
1600	64 5 <i>1</i>	64 59	60 5t	61 >7	61 55	58 52	55 51	54 50	52 48	52 48	48	52 51	55 52	52 49	57 54	5f 50	46	49 48	6
2000 2500	49	51	5 G	53	52	48	45	43	45	46	46	47	50	49	50	47	44	46	46
3150	45	46	46	45	46	42	42	43	47	46	42	46	46	- 4	49	-7	51	46	41
4000	45	46	46	44	44	41	42	44	48	46	41	46	42	43	46	46	52	44	- 6
5000	47	49	46	46	66	39	39	41	47	45	40	42	42	43	45	46	48	44	43
6300	46	48	44	44	43	39	41	40	46	43	38	40	49	40	43	44	44	42	4:
8000	47	49	43	44	44	40	42	41	47	42	37	36	3 9	39	44	-4	43	41	4.2
10000	45	46	40	41	45	30	39	39	44	39	39	36	36	36	42	42	41	38	36

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.









5 6

) IDENTIFICATION:

C-WEIGHTED OVERALL SOUNT LEVEL (OASLC) EQUAL LEVEL CONTOURS (CBC)

1.5

3

5

DISTANCE FRUM SOURCE (METERS)

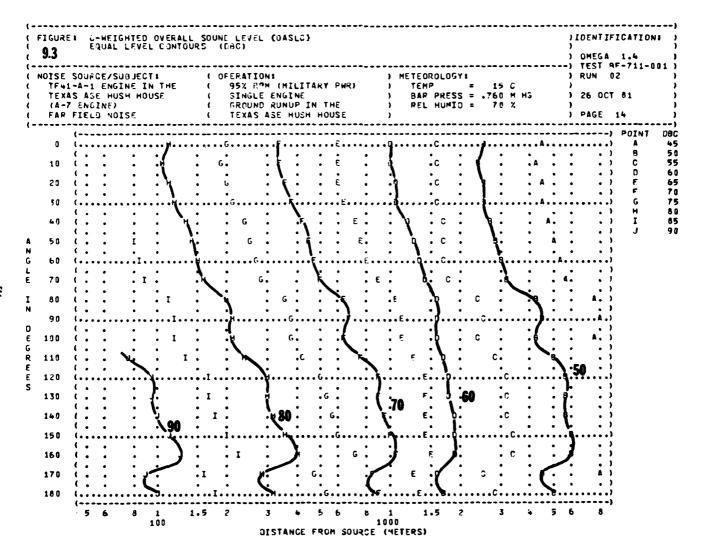
8

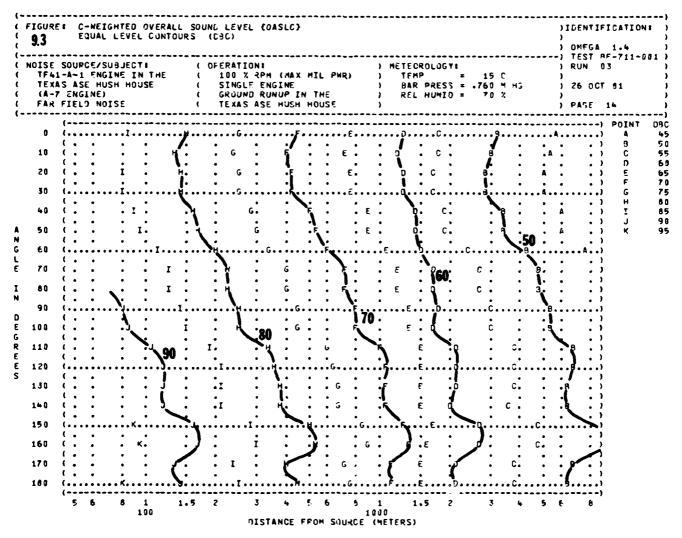
1000

1.5

2

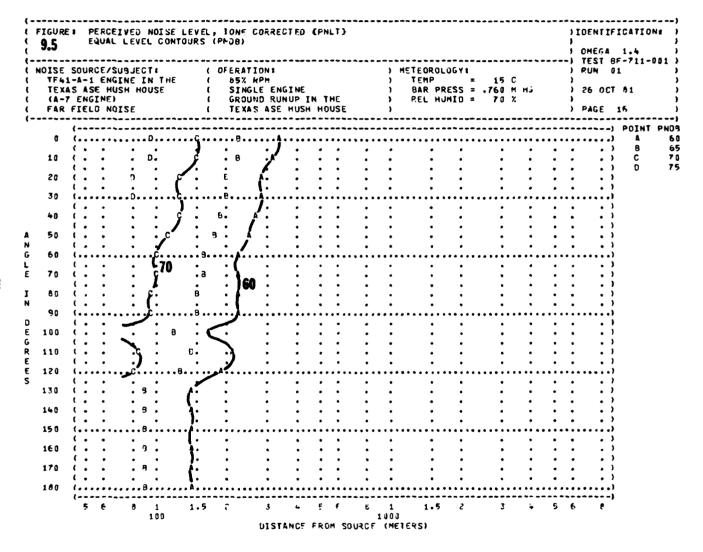
FIGURE



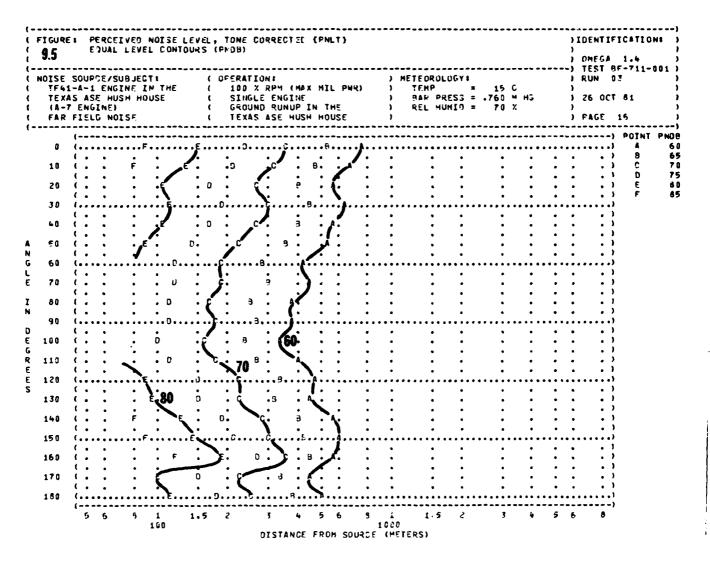


ä

=



.



ž

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER GAY (AFR 151-35, JULY 73) 47 LQUAL TIME CONTOURS (MINUTES)) IDENTIFICATION: 9.7) OMEGA 1.4 -) TEST RF-711-001 NOISE SOURCE/SUBJECT: (OFERATIONS) METEOROLOGYE) RUN 01 TF41-A-1 ENGINE IN THE TEXAS ASE HUSH HOUSE (A-7 ENGINE) TEMP = 15 C DAR PRESS = .760 M H3 REL HUHIO = 70 % 85% RP4 SINGLE ENGINE GROUND RUNUP IN THE) 26 GCT 81 REL HUNIO = FAR FIELD NOISE TEXAS ASE HUSH HOUSE PAGE 7 0 < 10 < **20<** 38< PERSONNEL MAY BE EXPOSED UP TO 968 MINUTES PER DAY 40 < 50< AT ALL DISTANCES FOOM SOURCE EQUAL TO OR GREATER THAN 75 METERS FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT) 69 < UNDER THE FOLLOWING EAR PROTECTION CONDITIONS! 86< NO PROTECTION 90 < MINIMUM CPL EAR MUFFS AMERICAN OPTICAL 1700 EAR HUFFS 166< V-SIR EAL PLUGS 110< CUMFIT TRIPLE FLANGE EAR PLUGS 120 < 130 < H-133 GROUND COMMUNICATION UNIT 146< 150 < 160 < 170< 180< 3 4 5 6 8 1 1 1000 DISTANCE FROM SOURCE (METERS) 100

.

DISTANCE FROM SOURCE (METERS)

Š

DISTANCE FROM SOURCE (METERS)

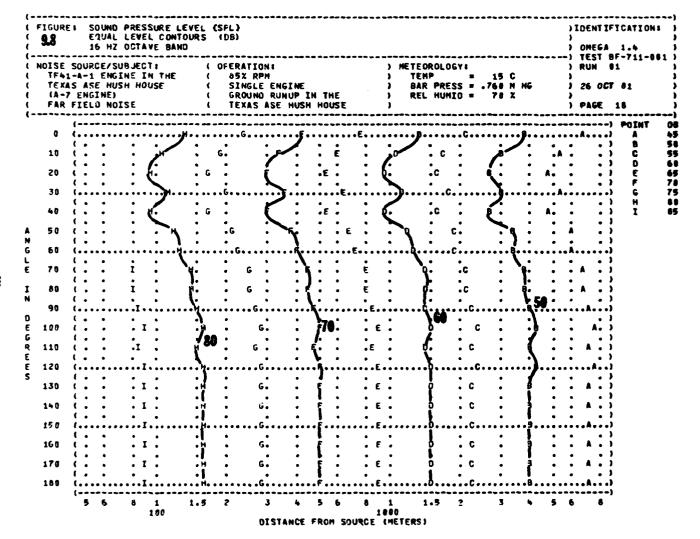
1.5

100

1.5 2

3

4 5 K



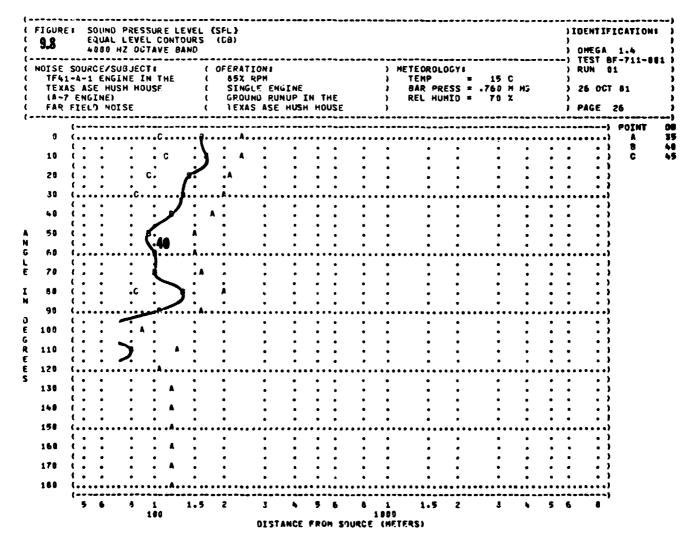
¥

벌

Ħ

뿔

ä



Ę

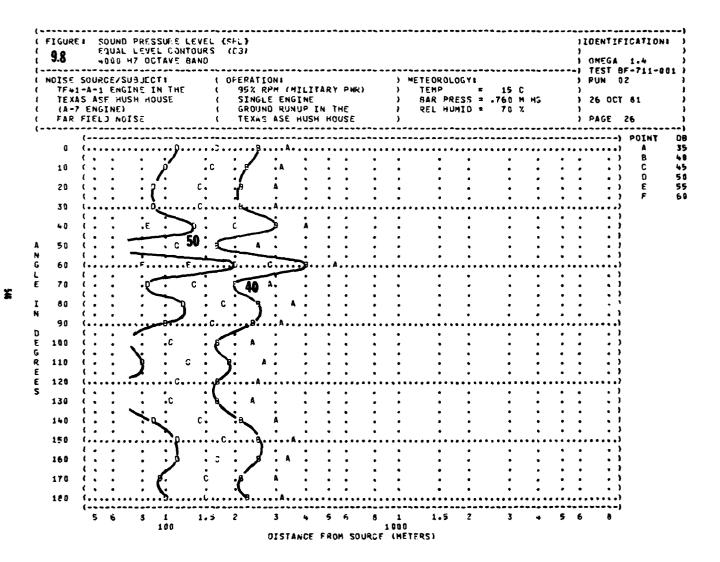
22

ű

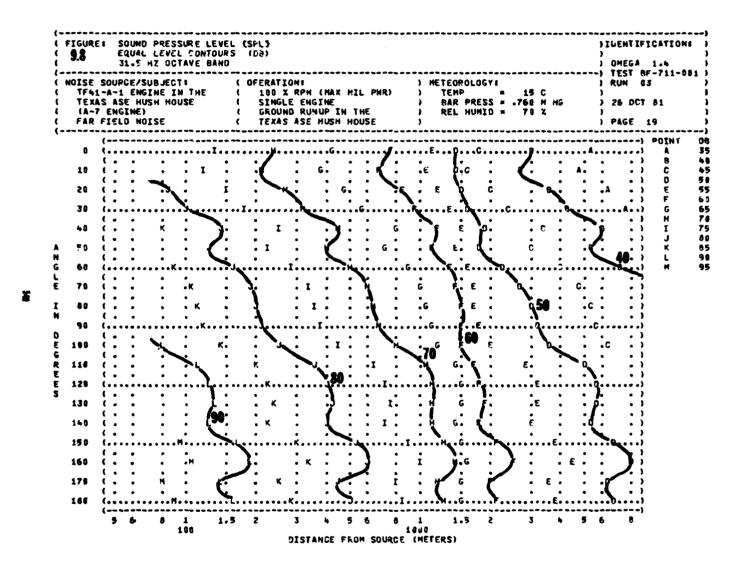
×

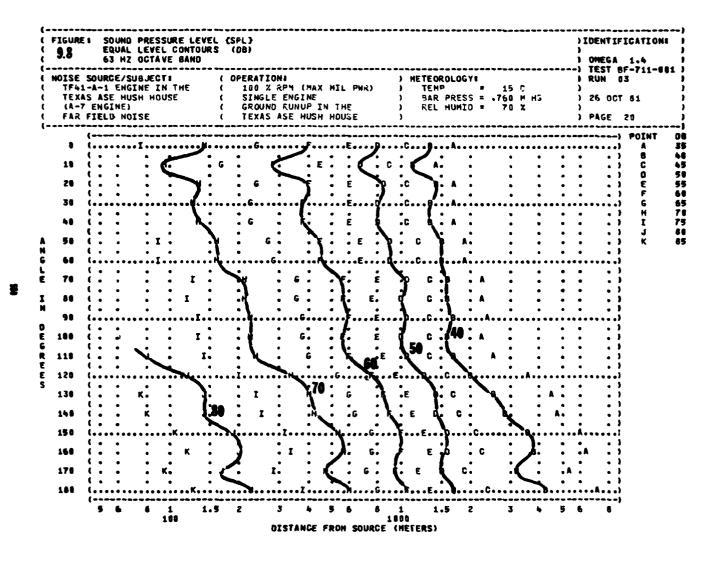
E

£

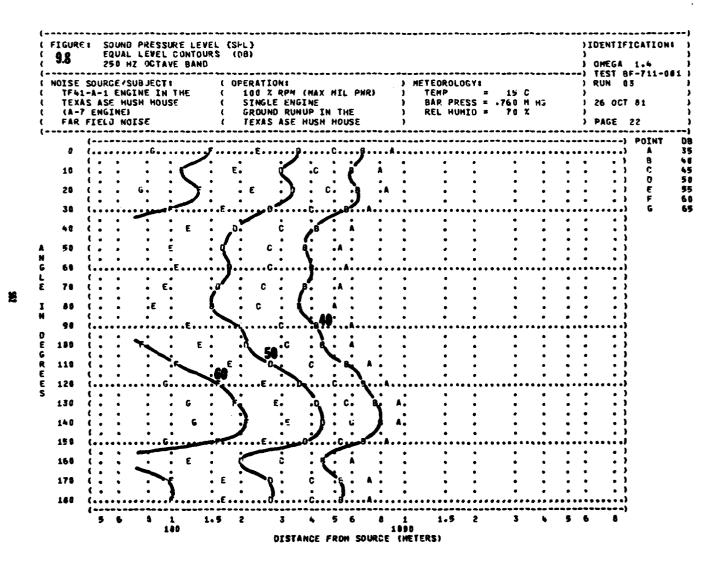


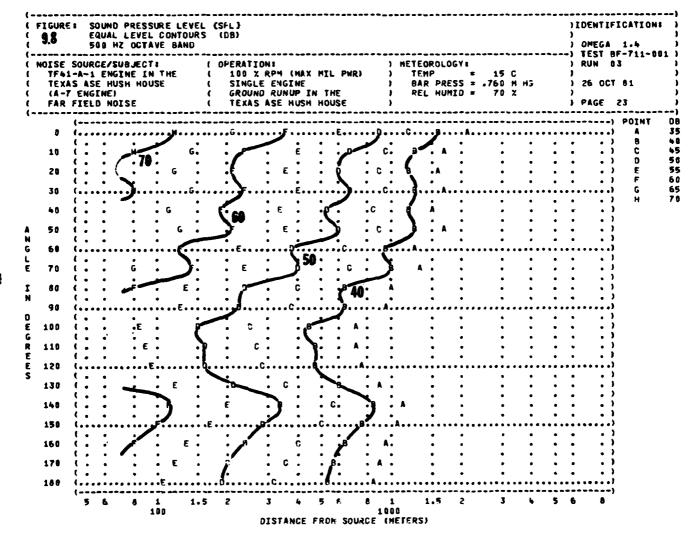
ä



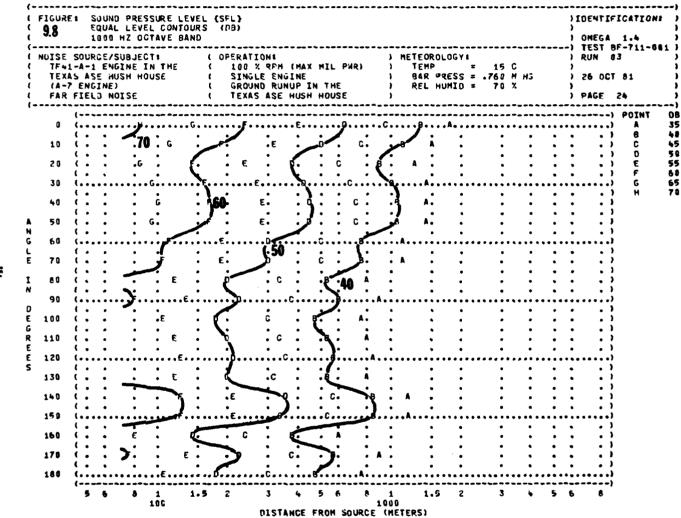


Ä

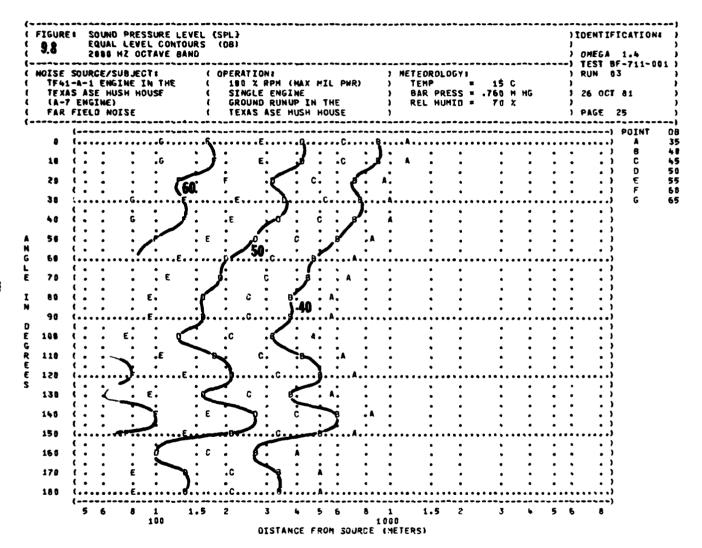


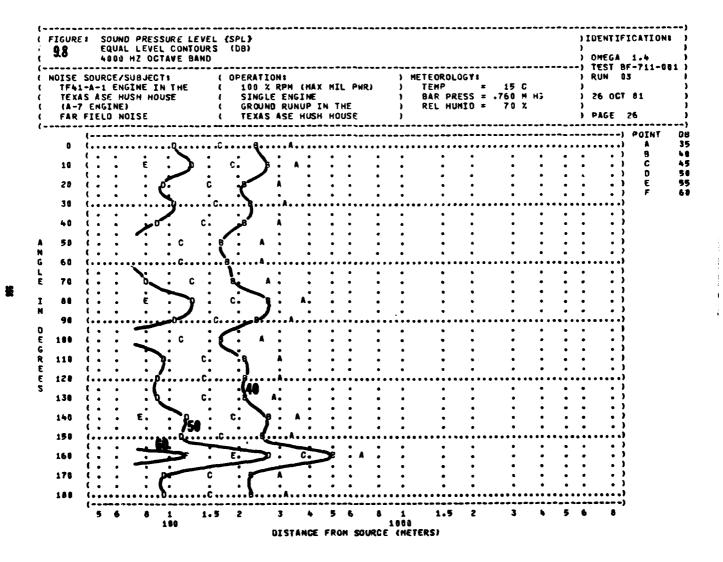


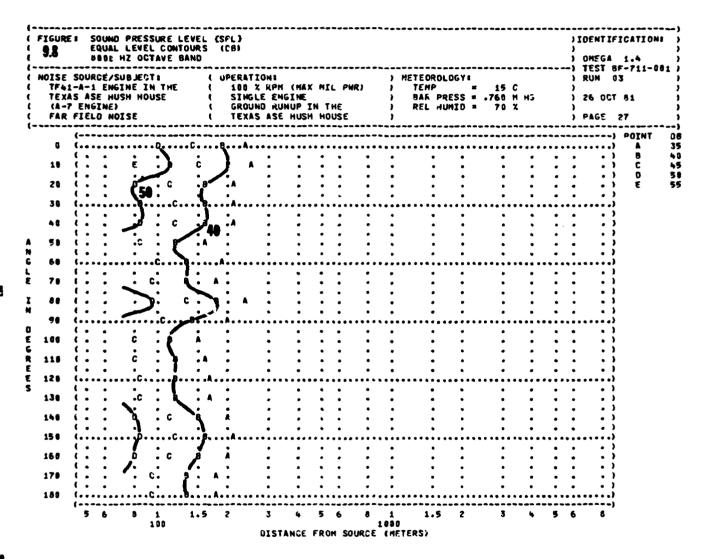
£



¥







į

TABLE 10.1

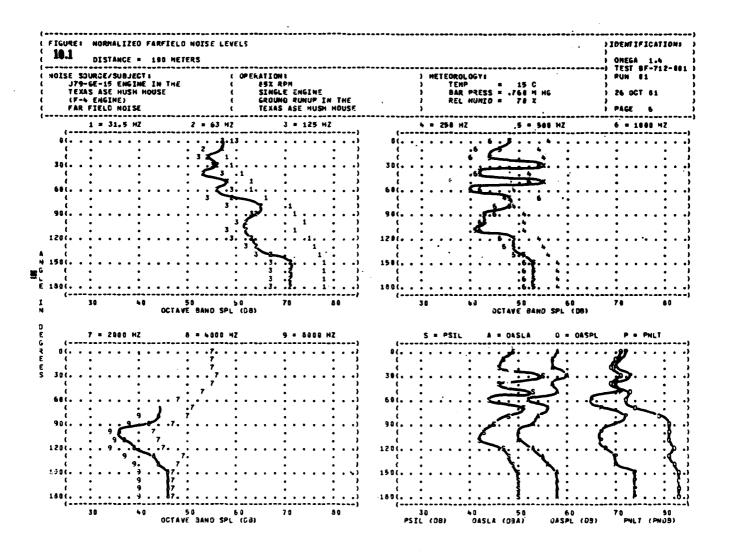
TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS J79-GE-15 ENGINE IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-712-001 (Engine For The F-4 Aircraft)

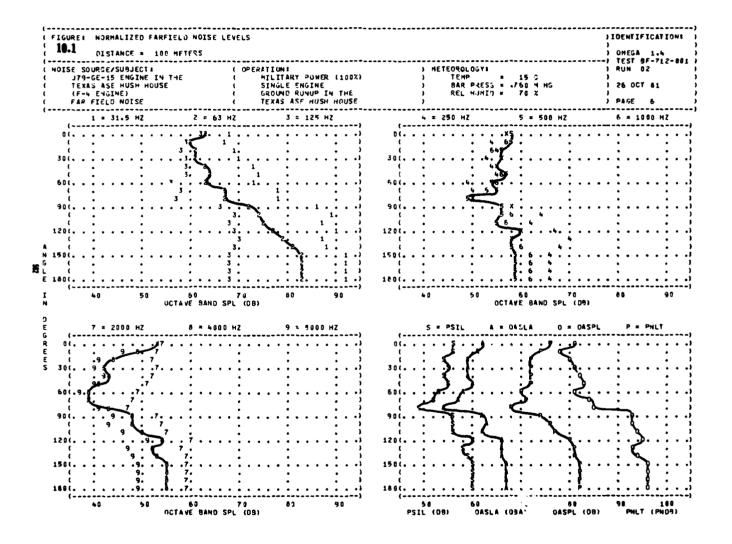
Engine Operation	Single Engine	
85%	85 % RPM	
	2980 LBS/HR FF	
	669 EGT	
Military Power	100 % RPM	
•	8349 LBS/HR FF	
	1121 EGT	
Meteorology		
Temperature	31 C	
Bar Pressure	.745 M Hg	
Rel Humidity	53 %	
Wind - Speed	4 M/Sec (8 Kts)	,
- Direction	190 Deg	

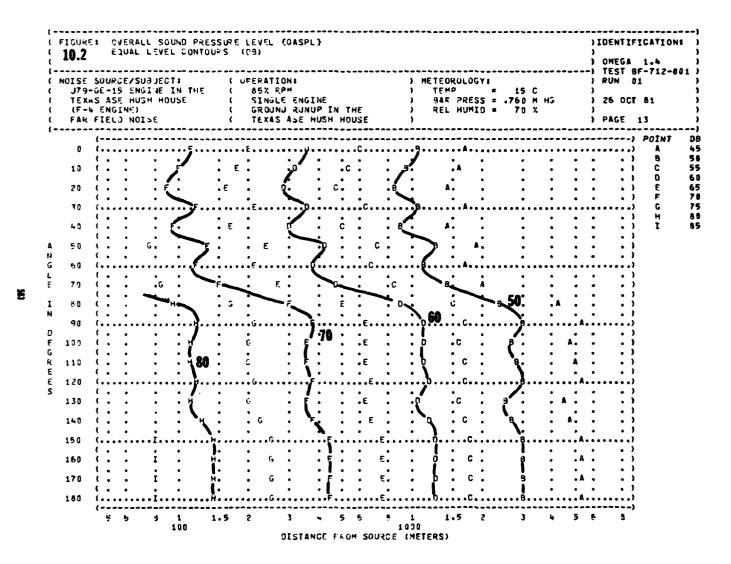
W. /	OCTAVE			er s													OMEGA TEST		
OISE SOURCE	E/SUBJEC	TI		(OFE	PATIO	N E) HI	ETEOR	OLOGY	•)	RUN	01	
J79-GE-19	ENGINE	IN TH	E	(8	5% RP	4)	TEMP		= .	31 C		,			
TEXAS ASE		USE			INGLE)	BAR	PRESS	7	45 M	HS	,	26 00	T 81	
(F-4 ENGI	_				KOUND)	REL	GINUH	= !	53 %)			
FAR FIELD	NOISE			(1	EXAS	ASE H	USH H	OUSE))	PAGE	5	
FREO								AN	GLE (DECO	FFC1								
(42))	10	29	30	40	50	60	70	30	93	100	110	120	130	140	150	160	170	16
-	_				-														•
12.5	67<	67 <	65<	67<	54 <	68<	£5<	67 <	74	75	73	74	75	73	74	74	74	74	74
16	65<	υ2 <	63<	554	62<	65<	€6<	68	75	76	75	76	75	74	75	76	76	76	7
20	624	60 <	01<	64	63<	66	65	67	71	75	76	75	76	75	75	75	75	75	7
25	55<	53 <	57 <	56<	59<	60<	62<	64	69	71	73	70	74	73	75	76	76	76	7
31.5 40	53< 53<	52 < 51 <	49<	54< 53<	54 < 53 <	564	56<	58 56<	64 63	64	65 59<	66	67 63	71 54	71 67	71 70	71 70	71 70	7
5 Q	51<	21 4	48<	50<	274	50<	54<	57<	63	62 60	58<		54<	62	64	6 F	65	65	é
63	51<	46 <	464	51<	où∢	53<	50<	544	59 59	59	55.c	• •	55 c	57	63	69	69	69	6
80	53	51 <	+b<	50<	+3<	52<	50<	50<	27 27	27 27	58	51 58	61	56	57	59	59	59	5
100	54<	534	50<	51<	53<	534	55	43<	55	60	57	56	55	55	57	60	6.0	60	6
125	55<	51<	,,,	53<	51<	32<	÷ 3<	494	52<	54<	56<		55<	60	60	61	61	51	F
160	55	51	47<	49	52	. 3 č	F 2	>3+	51	54	51	52	32	51	58	65	F. 5	65	6
200	51	50	50	49	46	5i	46	424	44<	46	48	49	51	51	54	56	=6	56	ĕ
250	5 2	51	53	49	54	51	444	43<	444	•7	47	45<	63	51	51	51	51	51	5
315	49	46	45	46	43	47	38<	40<	42	41<	41<		44	45	47	48	48	48	4
400	45	45	40	49	33 <	44	36<	40	43	33<	39<	37 <	45	46	48	49	49	49	4
500	42	38 <	40	50	37 <	49	35<	43	45	37<	3E <	34 <	44	+4	45	47	47	47	4
630	41	36 <	37 <	50	36 ⊀	53	35 <	45	33 <	39	37 <	35 <	4 3	42	نه ښ	46	46	46	4
800	41	38 <	36<	53	3 6 <	43	36<	47	40<	43	39<	38<	42	+3	45	₩7	47	47	L
1000	3 * <	36 <	34<	46	37 <	40	39	51	42	39	37 <	• •	→ 2	43	45	→7	47	47	4
1250	34<	33 <	34<	44	35 <	44	35<	40	39	36	33<	• .	39	→ 0	42	+3	43	43	4
1600	39<	36 <	38<	40<	39 <	45	36<	46	39 <	37<	32<		39<	43	42	42	42	42	4
2006	51	51	56	51	51	47	44	46	44	+2	3A<		43<	45	43	41	41	41	4
2500	53	53	52	53	52	49	Ŀÿ	4.3	47	45	~0	41	41	43	45	41	41	41	4
3150									38	36	31	32	3+	40	41	42	42	42	L L
4000 5000									37	35	31	31	3 S 3 2	36 36	38 38	40 40	4 O	6 D	
6 3 0 C									+0 36	39 35	31 30	31 30	31	36 34	36 36	37	37	37	3
8000									36	32 34	3 u	31	30	33	35	3 f	36	36	31
10070									34	32	29	30	25	32	32	33	33	33	3
OVERALL	71	70	69	71	69	72	71	73	79	d 1	81	81	4.5	91	62	93	63	83	8

W.Z.	CANCE =	100			FRATIO							OLOGY)	OMEGA TEST RUN		
J79-GE-15		•	Ε		MILITA	• -	HER	(100%)		<i>,</i> "	TEME			31 C		Ś	KON,	02	
TEXAS ASE	HUSH HO	USE	_	(SINGLE	ENGI	NE)	BAR	PRESS			HS)	26 00	T 61	
IF-4 ENGIN	(E)			(GROUND TEXAS	RUNL	P IN	THE		•	REL	CIMUH	=	53 %)	,		
FAR FIELD				(TEXAS	ASE H	IUSH I	HOUSE)							PAGE	2	
FREQ									GLE (neca	FFC)								
(HZ)	G G	10	20	30	40	50	e O	70	30	30	100	110	120	130	140	150	160	170	18
40.5		•	•.				•												
12.5 16	78	74 73	76 73	74 76	77 76	77 77	74 76	76 80	78 80	84	83 87	87	63 68	84	85 89	86 90	66 98	86	86
20	76 72	73 71	73	74	75	77	75	74	79	45	87	89 88	9.0	87 88	88	88	88	98 88	91
25	7 C	63	66	67	71	72	72	76	77	45	88	85	87	00	90	88	88	88	81
31.5	63	59	60	64	55	67	63	68	70	78	82	81	64	84	86	87	87	87	81
40	63	64	64	53	66	65	64	67	67	72	76	77	60	83	85	86	86	86	86
50	51	5f <	59	564	62	62	62	65	65	69	70	71	74	77	79	82	82	82	8
53	55<	56 く	534	55 <	544	56	54<	59	59	66	70	71	73	72	74	76	76	76	76
8 G	56	54	51<	52 <	53	53	52<	55	58	66	67	66	69	59	69	69	69	69	69
100	53	56	54<	56	56	55	53<	55	55	53	67	65	65	65	66	66	66	66	60
125	374	54 <	≯ ₹€	524		544	50<		51 <	61	65	63	63	62	62	61	61	61	6:
150	57	53	50	53	53	53	50	50	+8 <	58	60	60	62	66	63	59	59	59	59
500	53	50	49	40	4.5	50	46	46	46	55	61	59	65	66	63	60	68	60	61
25 0 315	53 53	50	52 45	5 G 45	51 45	51 47	45<	40 48<	45<	53 49	59 53	56	62 55	66 88	65 56	64 56	64 56	54 56	64 56
406	5 t	4€ 68	46	46	47	44	42	404	38 <	49	50 50	51 48	99 55	53	53	53	76 53	70 53	53
500	54	55	53	53	52	53	50	54	45	51	51	50	56	52	53	54	54	54	54
630	54	52	50	51	51	54	50	49	46	54	52	52	55	53	54	56	56	56	56
800	54	53	49	52	50	52	52	49	4E	56	55	52	55	53	54	56	56	56	ś
1300	¢ 1	52	46	50	50	50	47	48	43	51	54	50	54	52	54	56	56	56	50
1 25 0	51	51	49	56	49	49	49	46	43	51	51	52	54	54	56	58	56	56	50
1600	51	51	50	5 G	49	49	48	46	44	50	49	51	55	54	5 5	57	57	57	57
2000	47	47	45	46	45	42	41	41	41<	46	46	51	55	54	54	53	53	53	. 53
2500	44	42	40	42	41	39	37	36	38	45	47	47	53	50	50	51	51	51	51
3150	4/	43	39	37	39	36	35	34	38	44	45	46	50	48	50	51	51	51	51
4000 5000	4.5	45	39	36	37	35	32	33	37	42	42	43	45	46	48	49	49	49	49
6300	43	42 43	36 36	36 35	36 38	36 35	33 32	33 33	37 36	43 41	41	44 43	48	45	47 45	47	48 47	48	40
8300	5 a	4-3 4-3	36	37 37	38	37	35	38	39	41	39	39	46	43	44	45	45	45	
10000	50	42	37	35	36	34	31	32	34	38	36	42	45	39		41	41	61	4

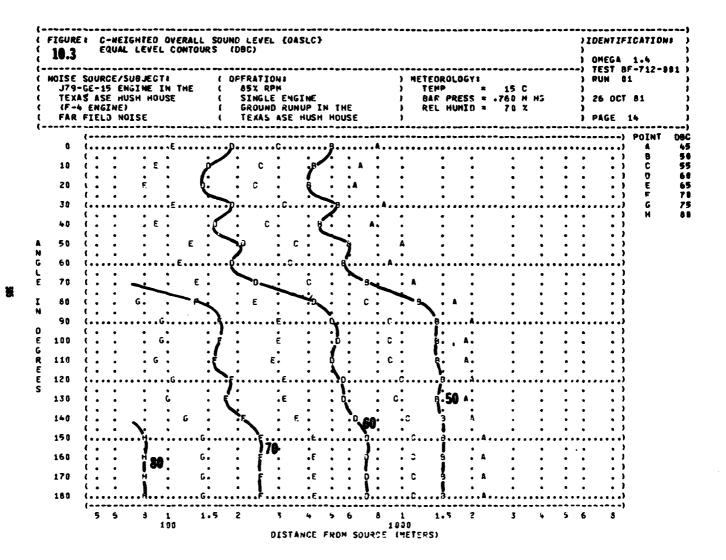
< LEVEL CORRECTED TO REMOVE BACKCROUND/ELECTRONIC NOISE.

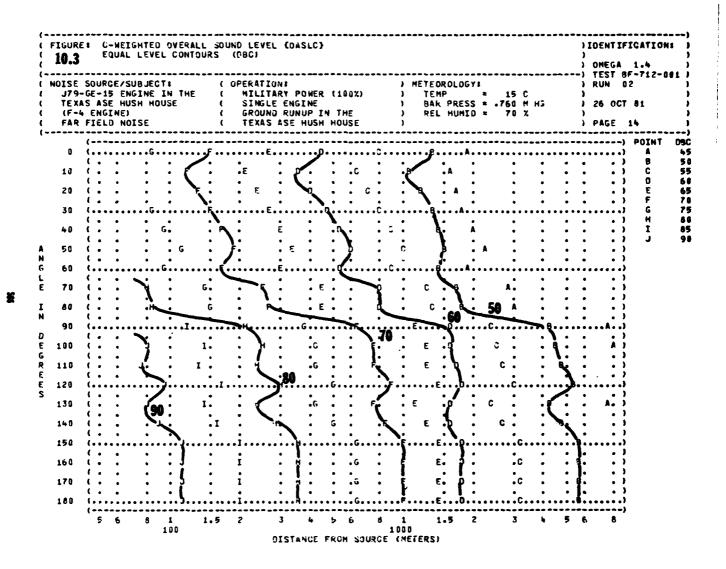


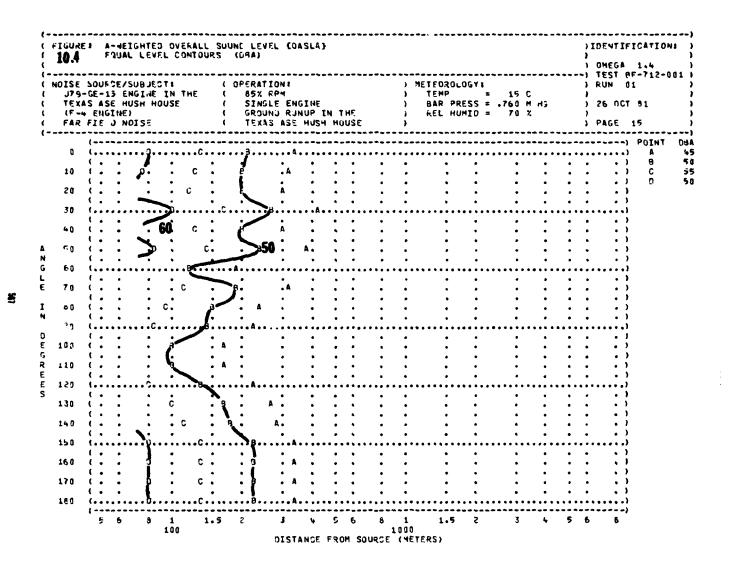


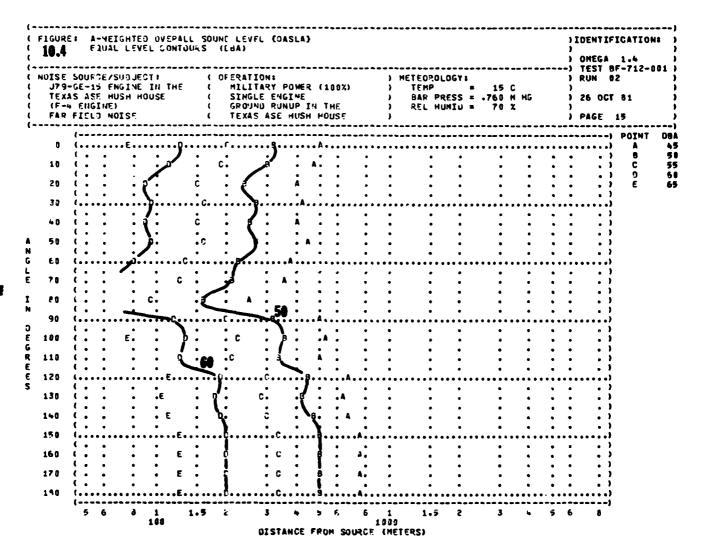


¥





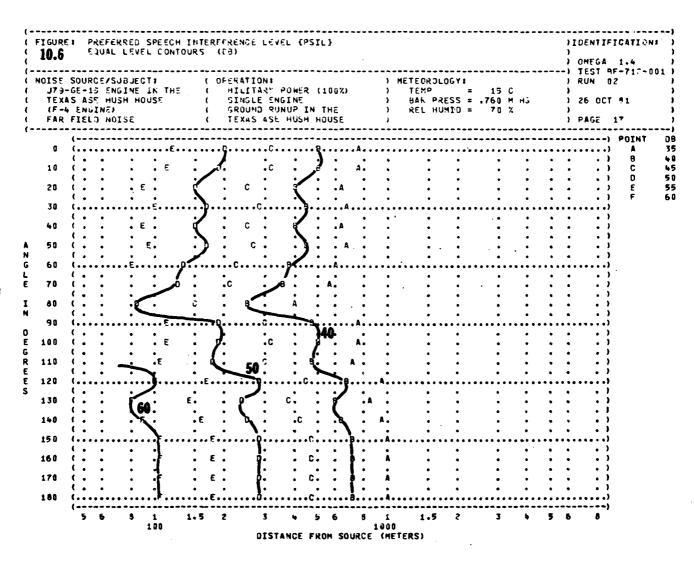




OISE SOURCE/SUBJECT: J79-GE-15 ENGINE IN THE TEXAS ASE HUSH HOUSE (F-4 ENGINE) FAR FIELD NOISE	CPERATIONS) METEOROLOGY: (85% RPH) TEMP (SINGLE ENGINE) GROUND RUNUP IN THE) REL HUMID (TEXAS ASE HUSH HOUSE)	8 ≈ 15 C ≈ .760 M H3) QMEGA 1.4) TEST BF-712-0) RUN 01)) 26 DCT 81)) PAGE 16		
10	B B B B B B B B B B B B B B B B B B B				

¥

ã



	USAF BIOENVIR			B WRIGHT-PA Ok. VOLUME 1	TTETC F/G 72. HUSH-HOU-	20/1 -ETC(
UNCLASSIFIED	AMRL-TR-75-50-	-VOL-172			NI	NI		
7.5.9 arra 0.8.7.3			b.					
			_		7	Ť		

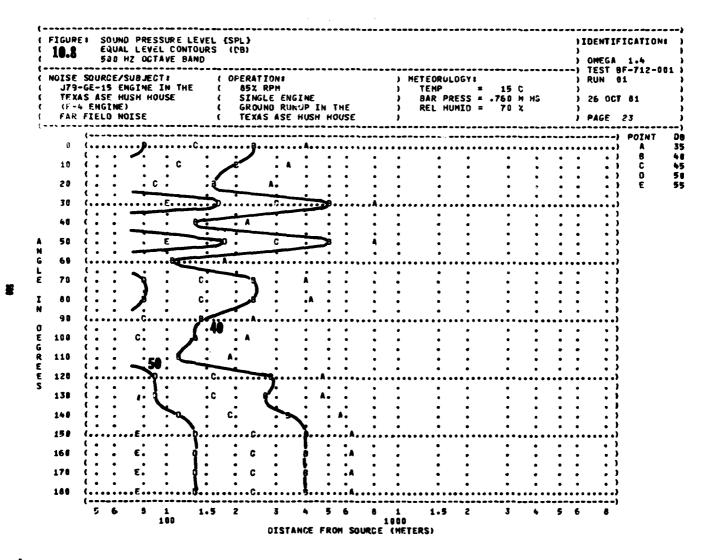
38 < 40 < PERSONNEL MAY BE EXPOSED UP TO 968 HINUTES PER DAY AT ALL DISTANCES FROM SOUPCE EQUAL TO OR GREATER THAN 75 HETERS 50 < FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT) 60< E 70< UNDER THE FOLLOWING EAR PROTECTION CONDITIONS: 884 NO PROTECTION MINIMUM CPL EAR MUFFS 98 < AMERICAN OPTICAL 1708 EAR MUFFS 1004 V-51R EAR PLUGS 118< COMFIT TEIPLE FLANGE EAR PLUGS 1284 130 < H-133 GROUND COMMUNICATION UNIT 148< 150 < 160< 170< 180< 8 1 100 8 1 1800 2 1.5 3 5 6 DISTANCE FROM SOURCE (METERS)

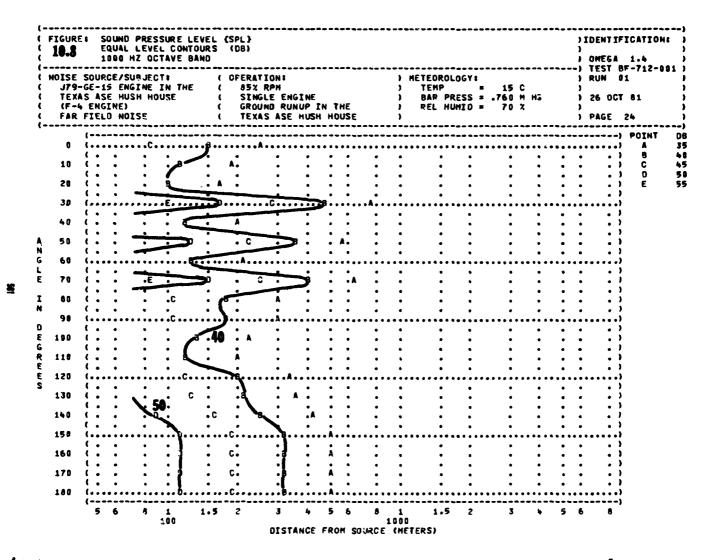
품

DISTANCE FROM SOURCE (METERS)

ä

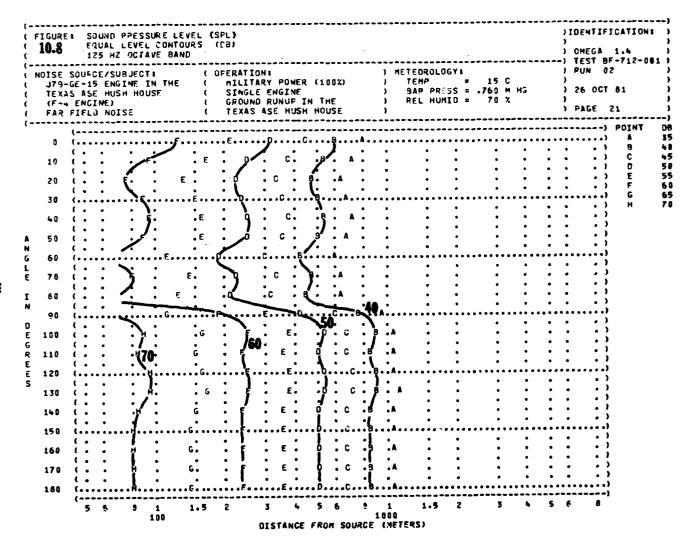
:



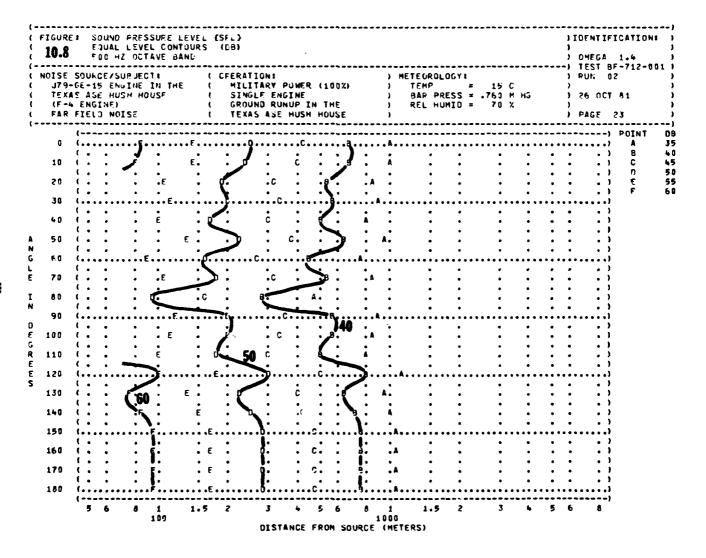


ä

£

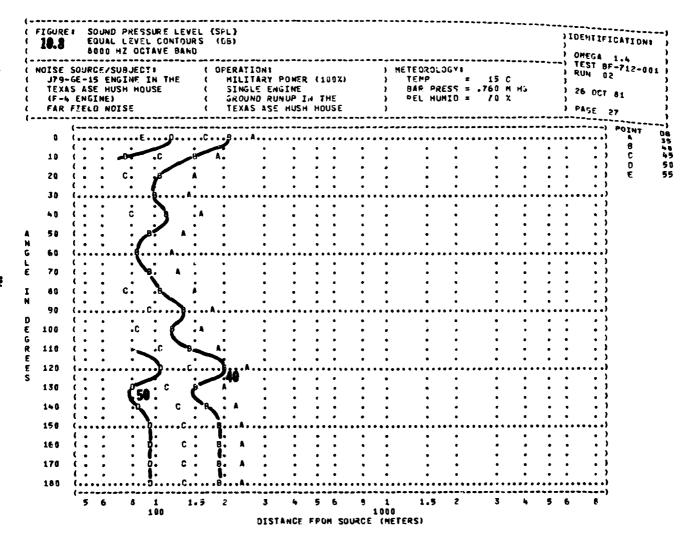


ž



¥

¥



ı

TABLE 11.1 TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS F100-PW-100 ENGINE IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-714-001 (Engine For The F-15 and F-16 Aircraft)

Engine Operation	Single Engine									
80%	80	% RPM								
	2774	LBS/HR FF								
	1.07	EPR								
Military Power	92	% RPM								
	8582	LBS/HR FF								
	2.40	EPR								
Afterburner Operation	92	% RPM								
-	41,593	LBS/HR FF								
	2.40	EPR								
Meteorology										
Temperature	25	С								
Bar Pressure	.760	M Hg								
Rel Humidity	73	%								
Wind - Speed	3	M/Sec (6 Kts)								
- Direction	170	Deg								

8 0

8 8

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

OVERALL

1 2 1/3	SURED S OCTAVE TANCE =	BAND)		EACE.	1007) _	DENTI! DHEGA		·
DISE SOURCE					RATIO) 1	FEST !	3F-71	-9
F108-PW-10			THE		ILITA		14ED 1	2.4.5	021) 71	TEMP	DLOGY		25 C		_ ; '	RUN (12	
TEXAS ASE			Inc		INGLE			2.4		;		PRESS	-		45		26 OC1		
(F-15/16 E		- J		-	ROUND			THE		, i		HUMIB		3 %	13	, , '			
FAR FIELD					EXAS		-			,			- '	•			PAGE	2	
FREQ								AN	GLE (DEGRE	:ES)					****			
(HZ)		10	20	30	40	50	60	78	80	90	100	110	120	130	148	150	160	178	16
12.5	8.	87	82	54	84	83	83	84	95	85	87	89	86	8.8	86	88	86	87	8
16	84	83	82	82	84	83	86	86	85	88	90	90	91	89	69	92	87	90	9
20	81	78	61	82	62	84	65		88	88	90	90	91	90	69	90	91	93	g
25	71	71	73	75	77	78	79	82	63	23	87	86	90	88	89	38	96	91	9
31.5	69<	71	66<	72	73	75	73	78	75	75	62	33	85	86	86	86	89	91	8
+0	70	72	72	72	73	74	74	76	74	74	77	89	83	82	83	86	89	8.8	•
50	66<	63 <	67<	67<	53<	71<	70<	73<	73<	73<	73<	75	77	77	81	63	85	85	
63											71<	71<	75<	71<	71<	76<		8.0	7
80													71<				70<	72<	
100 125													71<	68<	67<		67 <	68<	
160																			
200												67 <	67<	67<	67<				
25 0												•••		•	•				
315	65<																		
400	66	60 <	5€<	59<	55 <	52<	54<	544			55<	55<	58<	57<	56<	524	57<	55<	6
500	69	66 <	63<	64 <	60<	63<	63<	61<				57 <	56<						
630	69	64 <	624	634	61<	63<	624	58<				57<		57<					
800	65<	58 <	58<	57<	59 <	59<	60<	55<				57<	55<	57<	57<	55 <			
1000	62<										57<			57<	57<		•••		
1250 1600	64 63		56<	58<	• •	58<	59<	57< 53<	E 2 -		58<	56< 55<	56 < 55 <	58< 59<	59<	58< 55<		54<	,
2000	57<	70 °	704	56<	704	57<	7/4	734	764	764	57 < 54 <				>8< 52<	775	264		
2500	714										244	24.	534	301	264				5
3150													,,,						5
4000																			•
5000																			
6300																			5
6000	51<																		5
10000	51<	45 c	45<						+5<	45<							53<	44<	5
OVERALL	89	89	87	68	89	89	90	89	93	93	95	95	97	95	95	97	97	99	9

102 102 104

196 106 196 196 198 198

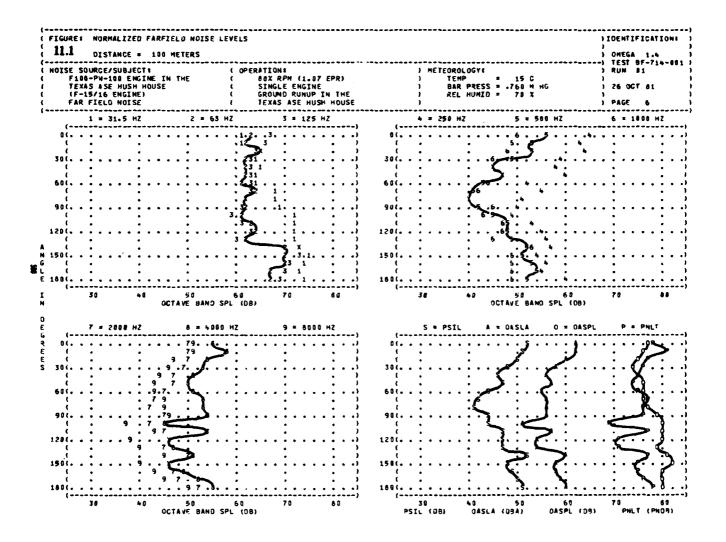
) IDENTIFICATIONS

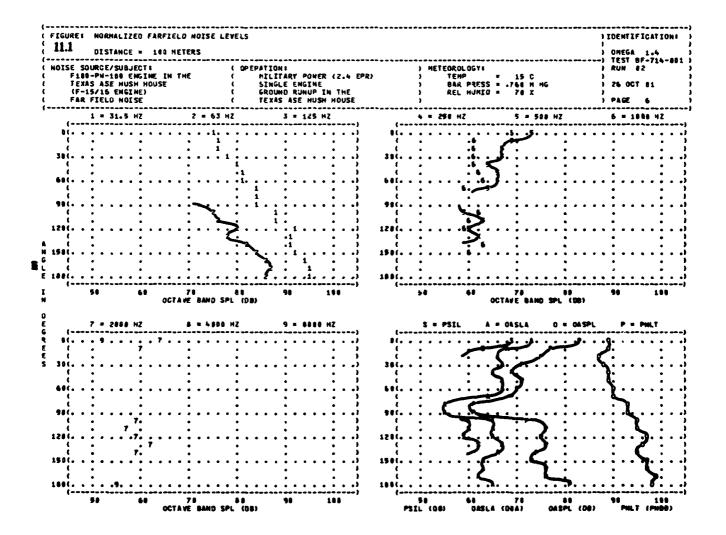
TABLES

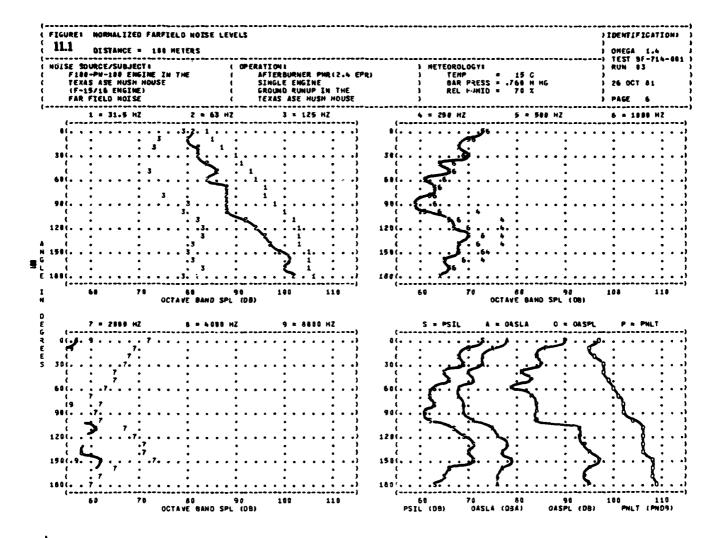
OVERALL

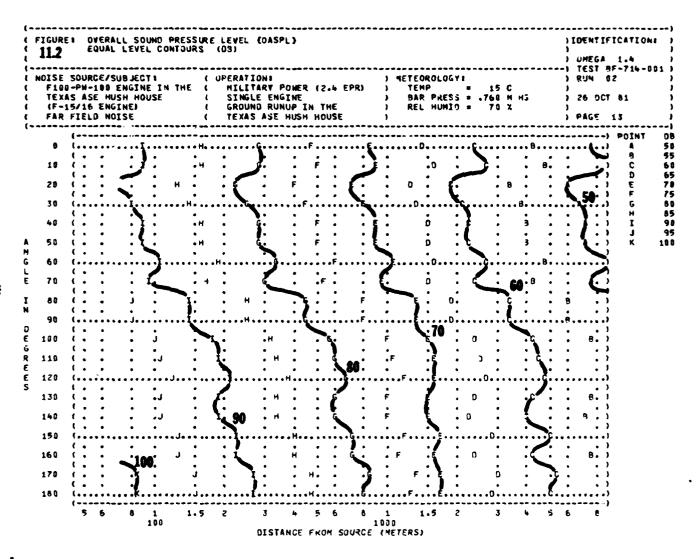
97

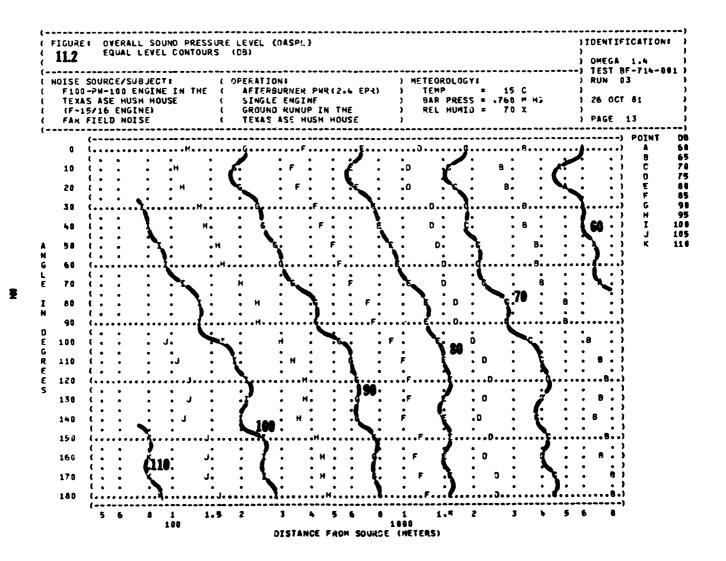
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

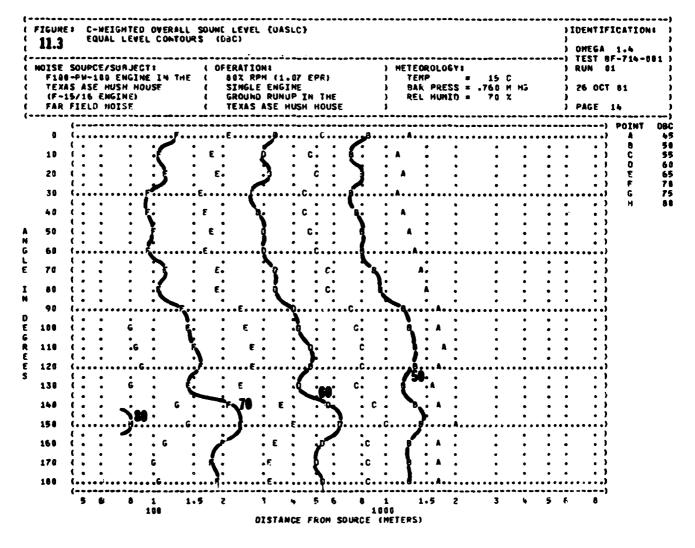




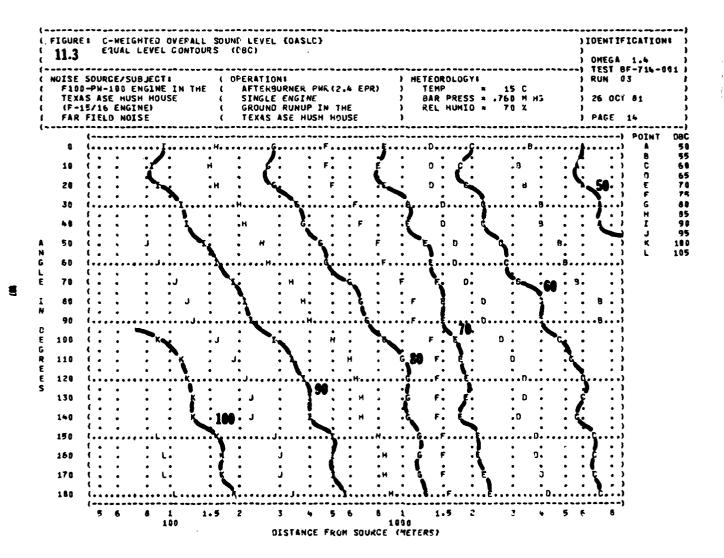


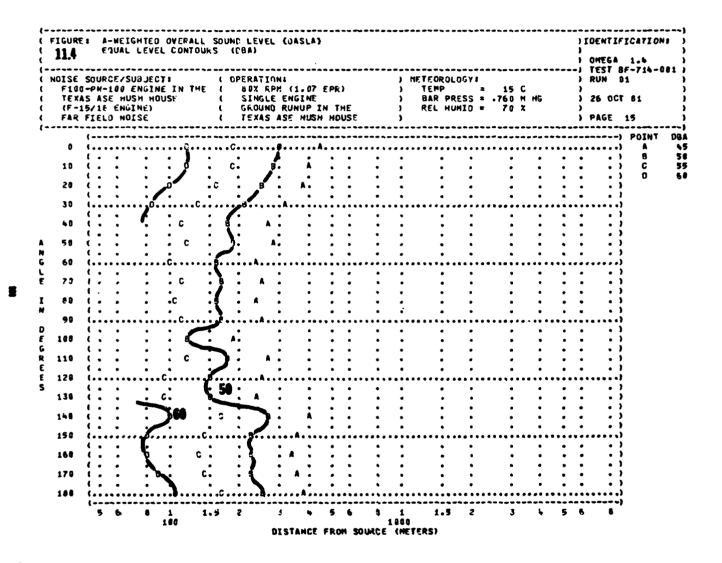


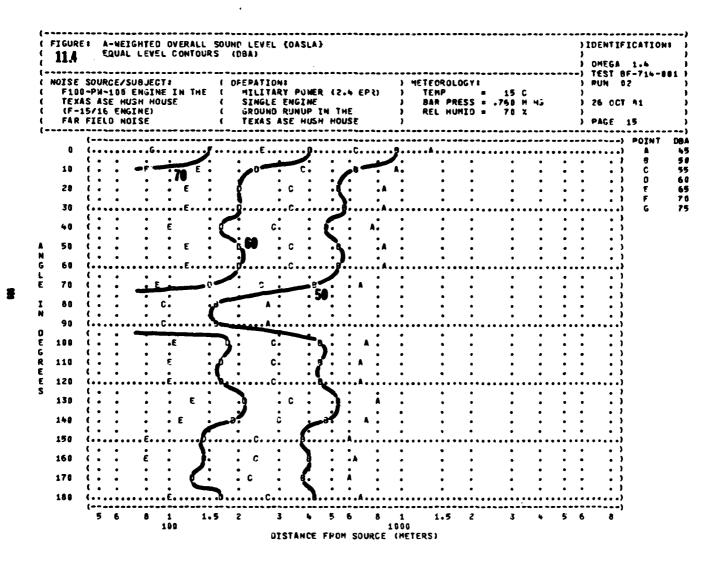




#







1.5 2

1000

DISTANCE FROM SOURCE (METERS)

+ 5 6

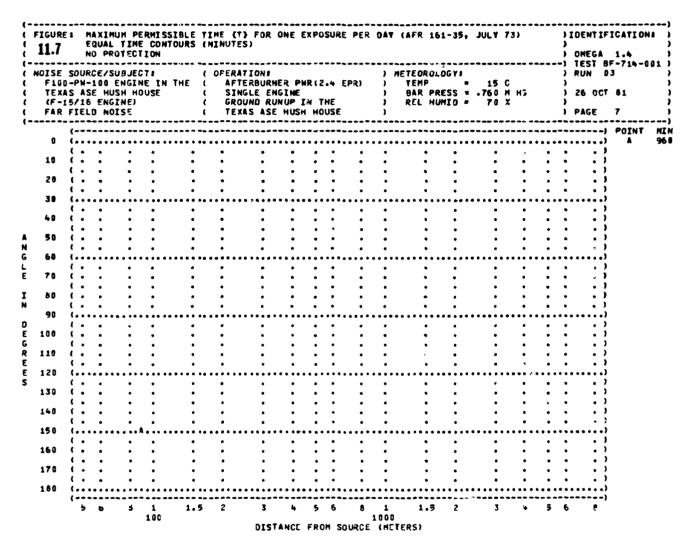
3

IDENTIFICATION:

150< 160 < 170< 189 <

1.5

:



NOISE S F100- Texas (F-15 Far F	EQUAL TIME CONTOURS (HINUTES) OMEGA	BF-714-001 03 7 81			
10 < (10 < (20 < (30 < (
A 50< (N () () () () () () () () () () () () ()	AT ALL DISTANCES FROM SOURCE EQUAL TO DR GREATER THAN 75 METERS FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)				
E 78< (I 80< (N 90< (MINIMUM OPL EAR MUFFS AMERICAN OPTICAL 1700 EAR MUFFS				
E 100< (G (R 110< (E (E 120< (S	COMFIT TRIPLE FLANGE EAR PLUGS				
138< 140< 150<))))			
160< 170<))))			
1	5 6 8 1 1.5 2 3 4 5 6 8 1 1.5 2 3 5 5 8 100 0istance from source (Meters)	•			

Į

.

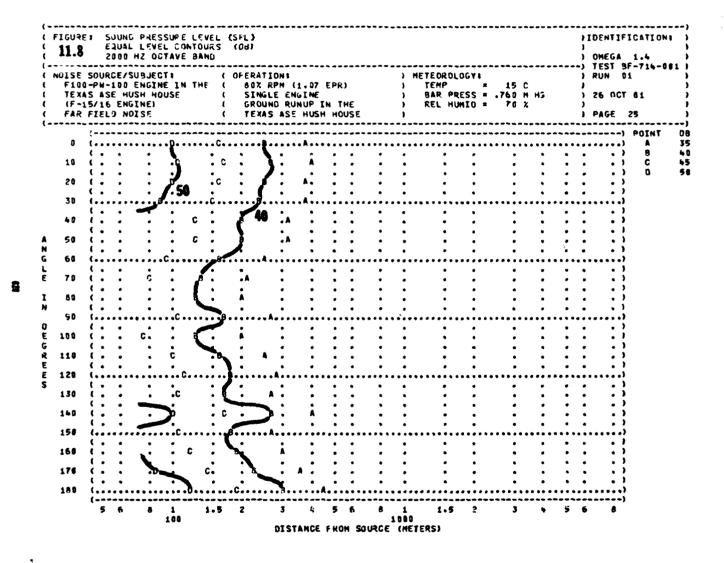


FIGURE: SOUND PRESSURE LEVE EQUAL LEVEL CONTOUR 125 HZ OCTAVE BAND) IUENTIFICATIONS) OMEGA 1.4 :-) TEST 8F-714-881
NOISE SOUNCE/SUBJECT: F100-PM-100 ENGINE IN THE TEXAS ASE HUSH HOUSE (F-15/16 ENGINE) FAR FIELD NOISE	(CPERATION: (MILITARY POMER (2.4 EPR) (SINGLE ENGINE (GROUND RUNUP IN THE (TEXAS ASE HUSH HOUSE) METEOROLOGY:) TEMP = 15 C) BAP PRESS = .760 M H3) REL HUMID = 70 %)	1 TEST 0F-714-001) RUN 02)) 26 OCT 61)) PAGE 21
	IIHEF NO INPUT DATA WERE COMPU LEVEL REQUESTED IS GREATER THAI		

FIGURE 1	SOUND PRESSUPE LEVE			IDENTIFICATION:
11.8	250 HZ OCTAVE BANG) DMEGA 1.4
				-) TEST BF-714-001
	URCE/SUBJECT:	(OPERATION:) METEOROLOGY;) RUN 82
F188-P	W-108 ENGINE IN THE	(MILITARY POWER (2.4 EPR)) TEHP # 15 C)
TEXAS	ASE HUSH HOUSE	(SINGLE ENGINE) BAR PRESS = .760 M HS) 26 OCT 81
(F-15/	16 ENGINE)	GROUND RUNUP IN THE)
	ELD NOISE	TEXAS ASE HUSH HOUSE)	PAGE 22
~~~~~	**************		**********	*****
	NO CONTOUR DATA	EITHER NO INPUT DATA WERE COMPU	TED (=9999.8)	
	OR MINIMUM CONTOUR	LEVEL REQUESTED IS GREATER THA	N MAXIMUM COMPUTED LEVEL.	
		erice acedica to avenue, and	in the state of th	

Ę

FIGURE: SOUND PRESSURE LEVE EQUAL LEVEL CONTOUR ADD HZ OCTAVE BAND	\$ (08)		) IDENTIFICATION: ) ) OMEGA 1.4) TEST BF-714-001
NOISE SOURCE/SUBJECT: F100-PM-100 ENGINE IN THE TEXAS ASE HUSH HOUSE (F-15/16 ENGINE) FAR FIELD NOISE	( OFERATION:	) HETEOROLOGY; ) TEMP * 15 C ) BAR PRESS = .760 M H; ) REL HUMID = 70 % )	) RUN 02 ) ) 26 OCT 81 ) PAGE 26
	ITHER NO INPUT DATA HERE COMPUT LEVEL REQUESTER IS GREATER THAN		

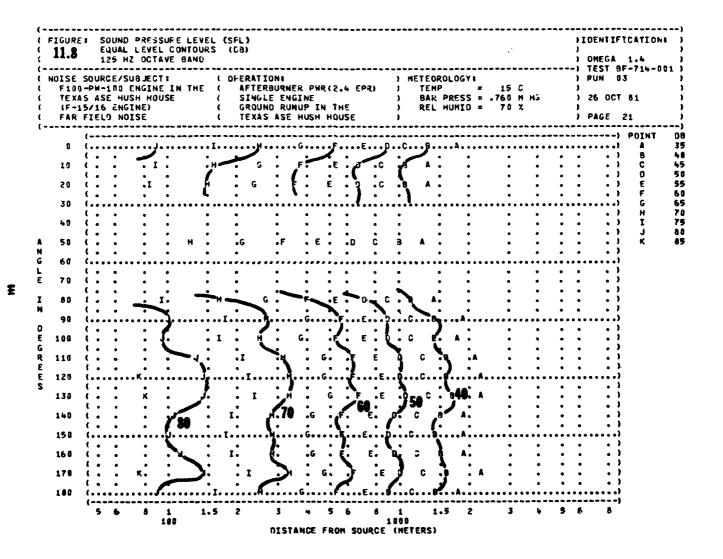
•

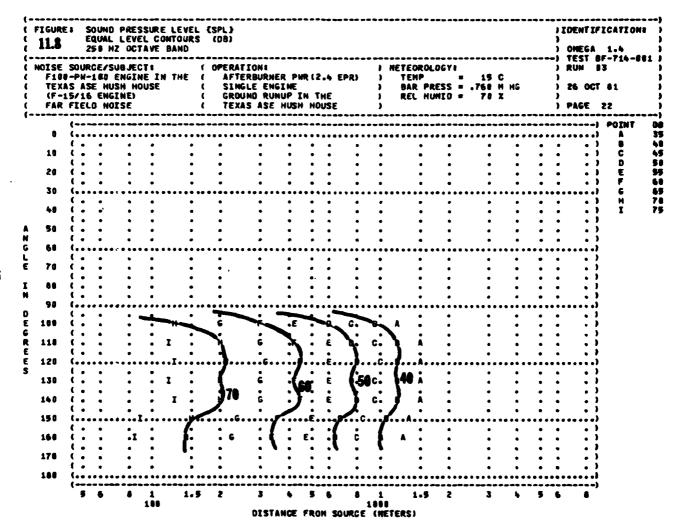
DISTANCE FROM SOURCE (HETERS)

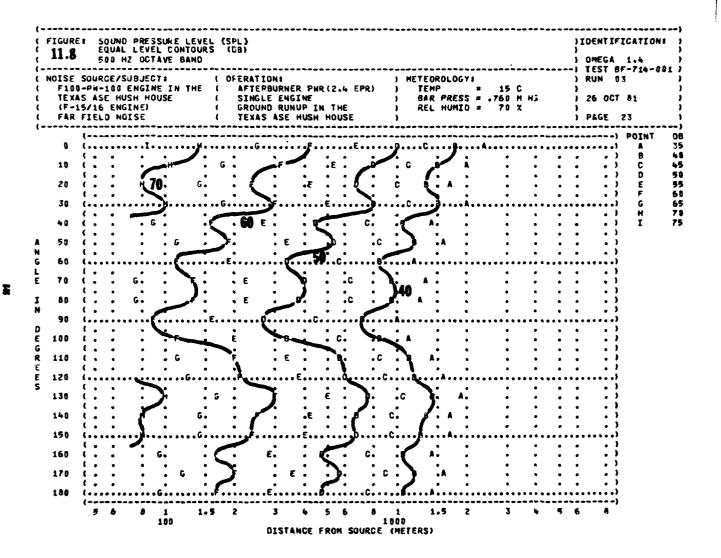
) IDENTIFICATIONS

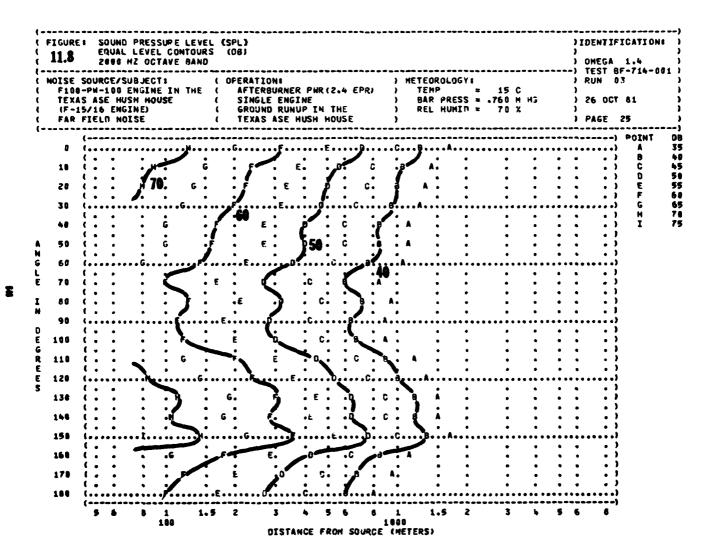
Ξ

£



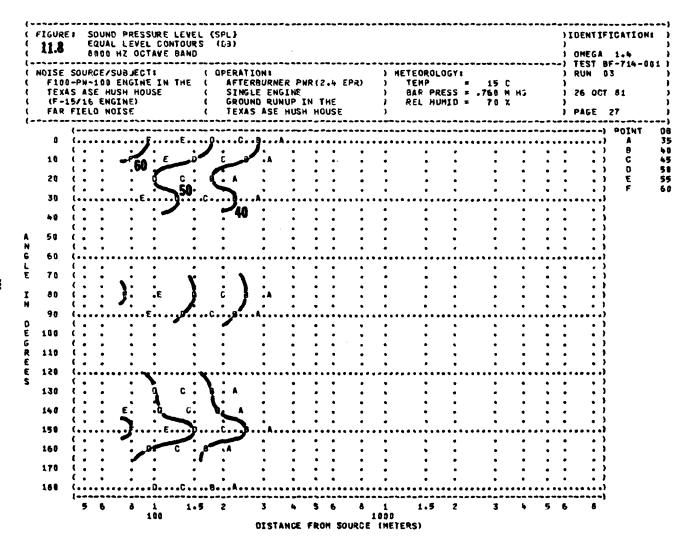






160RE	E0	WAL L	EVEL	URE LE CONTO AVE 84	URS IND	(D8)	)										••••		1	) OHI	EGA	1.4   1.4   F-714-86
F100 F100 TEXAS (F-15	SOUR( -PW-1 5 ASE 5/16	E/SUB LOO EN E HUSH ENGIN	JECT IGINE I HOU! IE)	in th Se	(E (	OPE A S: G!	RATIO FTERB Ingle Round	NI URNER ENGI RUNU	PHR NE P IN	(2. TH	4 EPR E	)	) ( ) )	METEOROLO TEMP BAR PRE REL HUM	GY t	: 15				) RUI ) ) 26	N O	81
PAR I	teri	NOIS			,	• • •	EXA >	MOE W	102H	RUU	3 E		,							PA	GE 	26
8	(, (		F		1	n															)	POINT
		•	•	•	•	•	- 10 - 1	•	•	•	•	•	•	•	•	•	- • • •	•	•	•	•••	B
16		•	•	•	•	:		•	•	:	•	•	•	•	:	:		•	•	•	• )	C D
20	( .	:	•	•	•	•		•	•	•	•	•	:	•	•	•		•	•	•	.)	E
30	(	••••	••••	•••••	••••	••••	••••	••••	••••	•••	••••	• • • •	• • •	•••••	••••	•••••	••••	••••	• • • •	• • • •	ښ.	Ğ
40		:	•	•	:	•		•	•	:	•	•	•	:	•	:		•	•	•	: ;	
50		•	•	•	:	•		•	•	•	•	•	:	•	•	:		•	•	•	• )	
60	( • (•••.	•		•	•	•		•	•	•	•	•	•	•	•	•		•	•	•	, ) ( , ,	
76		•	•	•	•	•		•	•	•	•	•	•	•	•	•	••••	•	•	•	• )	
		:		•	:	:		•	:	:	•	•	:	•	:	•		:	•	•	.;	
88		•	•	•	:	•		•	•	:	•	•	:	•	•	•		•	•	•	• )	
98	[•••• [••••	••••	••••		••••	• • • • •	••••	••••	••••	•••	• • • • •	••••	•••	•••••	••••	•••••	••••		• • • •	••••	•••)	
100		•	•	•	•	•		•	•	•	•	•	•	•	•	•		•	•	•	• •	
118		:	•	. F	: 1	Ε:	D	. c	. 8	•	Å	•	:	•	:	•		•	•	•	.;	
120	( • (•••	•	•	• •• •••	•	•	••••		•	•		• • • • •	•	• • • • • • • • •	•	•	••••	•	•	•	) )	
130	( •	•	:	•	:	٠		•	•	•	•	•	•	•	•	•		•	•	•	. ;	
140					_		-		•	•	•	•	:	•	•	:		•	•	•	. ;	
		:		: الم	•		<b>1</b> 20°	•		40	• .	•	•	:	•	•		•	•	•	.;	
150	· • · · ·	•	•		<b>.</b>	٠٤٠٠	•	••••C	:•••	<b>%</b> .	. A	• • • •	•	••••••	• • • •	• • • • • •	••••	•	• • •	• • • • •	•••}	
160	( .	:	•	•	:	•		•	•	:	•	•	:	•	•	•		•	•	•	• )	
L79		•	•	•	•	•		•	•	•	•	•	•	•	•			•	•	•		
180	Ì	•	•	• •••••	•	••••	• • • • •	• ••••	•	•••		•	•	· · · · · · · · · · · · · · · · · · ·	••••	•	••••	•	• • • •	•	;	
1	5	6	8	 1	1.5	2		 3	4	5	 6	 6	1	1.5	2	3			5 (	 5	) 8	

£



## **TABLE 12.1**

## TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS J75-P-19 ENGINE IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-716-001 (Engine For The F-105 Aircraft)

Engine Operation	Single Engine
90%	90.8 % RPM
	6446 LBS THRUST
	738 EGT
Military Power	103 % RPM
	14550 LBS THRUST
	1133 EGT
Afterburner Power	103 % RPM
	21753 LBS THRUST
	1134 EGT
Meteorology	
Temperature	25 C
Bar Pressure	.741 M Hg
Rel Humidity	<b>69</b> %
Wind - Speed	2 M/Sec (4 Kts)
- Direction	100 Deg

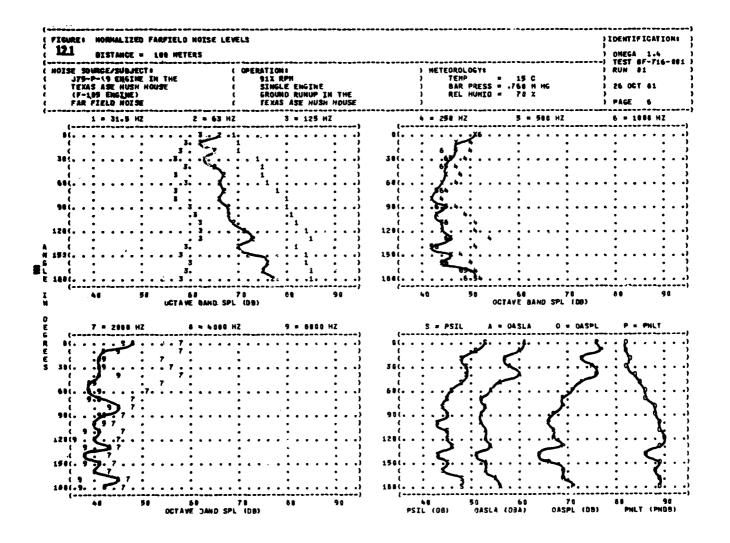
199 1/3	SURED S OCTAVE TANCE S	BAND														)	DENTI OMEGA TEST	1.4	,
DISE SOURCE	/SUBJEC	T1		( 0	PERATIO	DN 1				) M	ETEO	ROLOGY	ŧ					01	•
J75-P-19 E	NGINE :	IN THE		(	91% RI	PH				)	TEH	•	=	25 C		)			
TEXAS ASE	HUSH H	JUSE		(	SINGL	E ENG	INE			)	BAR	PRESS	± .7	41 H	H;	)	26 00	T 61	
(F-185 ENG				(	GROUN	) RUN	UP IN	THE		)	REL	HUMID	=	69 %		)			
FAR FIELD	NOISE			(	TEXAS	ASE	HUSH	HOUSE		•						)	PAGE	5	
FREQ									CLE	(DEGR									
(HZ)	a	10	20	30	40	50	60	70	60	90	100	110	128	130	140	156	160	170	18
******	•	••		•	7.	,,			•	70	100	***	100	130	140	136	100	1,0	10
12.5	78	78	77	78	78	79	78	76	81	82	81	81	81	80	78	81	77	77	7
16	78	76	79	74	80	79	83	82	83	82	83	83	84	83	8.0	83	82	8.0	8
20	74	75	76	77	78	80	79	81	82	83	84	63	84	82	80	8.0	81	85	8
25	67	67	67	71	72	72	75	78	79	79	80	81	82	82	78	82	81	83	8
31.5	63	62	62	66	67	69	67	68	71	71	74	76	78	79	76	79	8 0	79	7
4.0	62	64	66	66	69	67	69	06	65	66	67	71	74	76	76	76	78	77	8
5 C	63	58	63	61	62	66	64	65	64	65	65	66	68	71	69	71	75	73	7
63	60	56	57	58	59	58	58	60	60	62	62	64	67	65	62	65	67	68	6
8.0	59	58	57	56	57	56	58	57	60	61	60	60	62	63	58	60	63	63	6
100	59	56	55	54	56	54	58	55	<b>55</b>	58	59	59	60	60	57	56	56	57	5
125	57	55	52 49	53 48	53	52	52	52	50	55	56	56	56	56	53	52	56	53	5
160 200	54 47	51 45	45	40	49 44	47 46	47	46 42	45	50	51	51	53 49	55 53	50 50	4.8	50 47	50	4
25 O	47	46	46	44	42	41	43	42 40	41 39	+4 42	47	48 46	49	47	> U	44	47	49	4
315	44	42	42	41	38	39	36	36	36	41	39	43	48	43	38	41	40	43	4
400	44	41	40	39	36	38	35	35	36	40	38	43 39	39	42	36	40	38	43	
500	47	43	63	43	41	41	48	40	38	39	37	39	39	41	36	41	39	44	4
630	40	42	41	41	41	41	40	39	38	40	38	40	40	40	37	41	39	45	Ĭ.
800	4.3	40	38	39	38	39	39	38	37	40	38	41	40	40	37	40	39	43	4
1000	46	41	39	39	38	40	36	38	36	37	37	40	39	40	38	40	40	43	
1250	49	44	+1	41	41	41	40	40	37	38	37	40	39	40	39	42	40	42	À
1600	53	46	45	45	46	45	43	40	40	39	37	39	39	41	40	39	38	41	4
2000	55	57	52	55	57	52	49	47	46	43	41	42	41	41	38	40	39	43	4
2500	4 6	45	46	48	50	45	41	40	39	41	39	40	40	38	34	37	36	41	3
3150	36	33	33	33	34	34	33	33	35	36	35	36	36	37	34	37	36	41	3
4880	45	37	36	37	35	33	34	38	41	37	35	36	34	36	33	36	35	41	3
5000	44	39	37	38	38	34	35	37	41	36	34	35	35	39	33	35	34	38	3
6300	44	43	39	39	38	37	38	35	+1	38	33	33	33	36	31	33	35	34	3
6 0 0 0	42	41	36	38	39	35	37	36	39	36	35	34	33	34	30	32	31	33	3
10000	40	38	37	36	44	35	35	35	37	39	42	36	32	32	3.3	36	31	31	3:

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

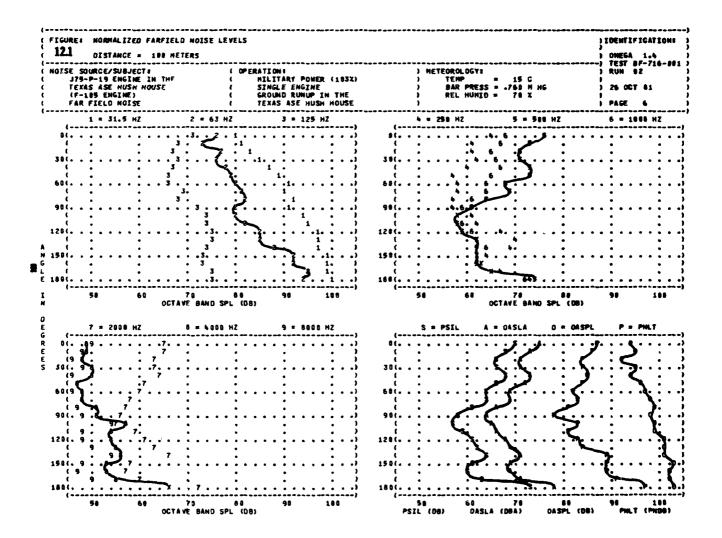
	1/3 OCTA	AE BYNE	9		<b>LEVEL</b>	(99)										)	DENTI		-
12.2	DISTANCE	= 100	MET	r ERS												)	OMEGA TEST	BF-71	
NOISE SOU					PERATIO					) H		SOFOCA				•	RUN	0.5	
J75-P-1	L9 ENGINE	IN TH	E	l	MILITA			(103X)	)	)	TEM		=	25 C		)			
TEXAS A	ISE HUSH	HOUSE		(	SINGLE					)		PRESS			H3	)	26 00	T 81	
(F-105	ENGINE)			(	GROUN	) RUN	UP IN	THE		)	REL	HUMID	*	69 X		)			
FAR FIE	ELD NOISE			(	TEXAS	ASE	HUSH	HOUSE		)						)	PAGE	2	
FREQ								ıa.		(DEGR						••••			
(HZ)	0	10	20	30	40	50	60	70	80	96	100	110	120	138	148	150	168	170	180
12.5	5 89	92	88	89	68	91	91	92	90	90	89	92	92	93	93	93	91	89	91
	83		88	90		88	91	93	95	92	92	91	92	92	91	94	92	91	92
16			81	90 88	-	90	31	93	93	93	93	91	94	94	94	95	94	96	95
20	88			82		40 47	89	88	93 31	93	93	92	94	94	95	96	93	96	99
25	_ 76		80	77			82	- •		84	87	90	91	92	91	93	95	92	99
31.5			73			61		63	84	79		85	88	90	91	94	94	92	99
40	75		78	79		81	83	81	73		83			84	87	90	98	94	9:
50	75		76	74		78	79	80	80	77	76	77	82	• •					87
63	69		68	70		70	70	74	75	74	77	79	80	78	79	85	86	8.8	79
8.0	67		64	65		65	65	69	71	73	73	72	77	77	76	74	76	82	
100	68		64	66		64	64	66	67	70	72	72	72	73	70	70	78	73	7
125	66		65	62		60	60	63	61	66	68	68	68	69	69	6.8	67	67	67
160	62		57	60		57	59	59	58	60	62	65	66	67	67	63	63	63	69
200	55	54	53	56		53	54	55	54	54	59	60	65	69	67	59	57	63	69
25 0	58		57	57		53	54	54	51	51	54	57	61	64	64	60	59	62	60
315	6.1	55	58	57	54	50	51	51	49	49	49	52	54	58	61	57	57	68	67
408	70	63	63	63	63	59	59	60	54	52	49	51	53	57	56	55	57	60	67
500	73	71	69	58	70	70	66	66	61	57	55	53	55	56	57	58	57	61	69
636	69	67	65	65	68	69	62	62	60	56	53	54	55	57	58	57	56	60	73
800	6.2	60	59	61	62	62	60	59	56	55	54	54	56	56	57	55	56	59	69
1086	62	61	59	68	61	60	56	59	55	53	53	54	57	56	59	56	57	68	67
1250	64		60	Á1	63	59	58	59	55	53	52	54	56	57	60	59	59	59	67
1600	64		61	61		59	59	56	55	53	51	54	56	58	60	55	53	57	69
2000	58		56	56		53	52	51	51	49	50	54	57	59	63	52	51	55	64
2500	50		49	50		47	46	45	47	48	49	52	56	54	55	50	50	53	67
3150	47		- 11	46		45	45	45	47	47	16	51	51	51	52	49	49	51	6
4800	42		41	43		41	42	42	45	46	46	50	49	51	52	48	4.8	51	6
5000	44		42	47	. •	41	41	41	44	46	56	48	47	49	49	46	47	49	61
6300	45		42			40	41	40	43	45	54	46	45	46	49	45	45	48	63
8000	46		43	43		40	42	41	44	44	43	44	45	47	53	44	44	46	6.3
10000	4.3		41	42		42	43	39	42	42	42	43	42	44	48	44	41	43	57
OVERA-L	L 94	95	92	94	93	96	97	98	99	98	98	99	100	100	101	102	102	102	183

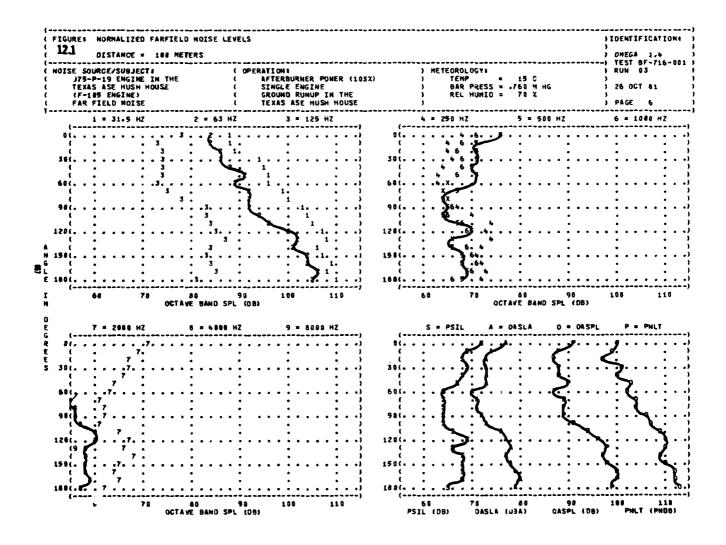
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC HOISE.

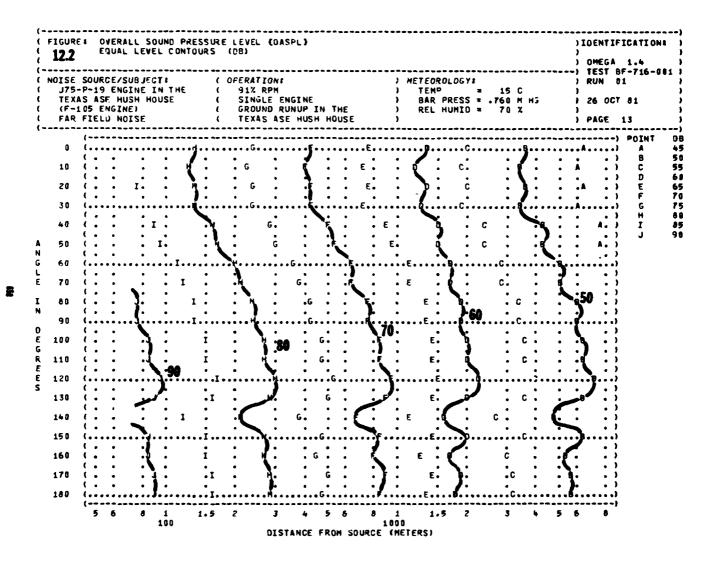
		ASURED : 3 Octavi			SURE	LEVEL	(60)										) ;	DENTI	FICAT	IONS
ļ	7) 7)	STANCE			ERS													OMEGA		
•	TEE EQUA																	TEST		6-00
L	J75-P-19				( 04	ERATI		a 00u	IER (1	0.7"	) H	ETEOR TEMP	SOFOCA		25 C		,	RUN	03	
	TEXAS ASE				•	-	E ENG		EK (1	0341	í		PRESS			u:	•	26 00	T 84	
	(F-105 EN		0031				אנא פו	-	THE		í		HUMIO		b9 %	73	í	27 00	/1 ~1	
	FAR FIELD								HOUSE		í		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		0, 4			PAGE	2	
•	FREQ								Δ	 NGLF	(DEGR	EFS)								
	(HZ)	o	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
	12.5	96	94	91	93	93	96	93	95	95	97	Эь	99	98	97	97	9 E	95	100	98
	16	93	96	92	95	93	96	96	98	98	97	100	100	101	99	98	101	100	100	99
	20	93	92	89	97	92	98	98	100	98	100	101	102	102	102	100	101	104	104	105
	25	87	84	86	92	91	94	94	97	97	100	101	101	105	104	102	102	102	105	106
	31.5	80	62	80	86	99	68	89	92	95	97	99	100	102	103	100	101	104	103	104
	40 50	79 81	63 80	85	86 83	63 87	87 89	86 88	89	90 89	94	97	99	100	102	100	103	105	101	105
	63	60	83	80	82	80	56	63	90 86	67	88 87	91 86	94 89	93 92	99 96	100 35	102 97	102	104	103
	8 D	75	74	75	77	74	75	75	80	83	84	86	90	91	90	35 66	99	100	94	91
	100	76	71	72	71	71	72	71	73	77	52	81	83	84	86	83	82	82	83	81
	125	72	68	69	69	68	68	66	67	71	75	76	78	76	78	77	76	77	77	73
	160	67	62	65	65	63	63	63	64	66	69	72	72	73	75	73	70	72	72	70
	200	61	61	61	62	60	59	60	61	62	65	68	72	69	71	69	67	68	69	68
	250	64	62	61	61	59	5 5	59	59	60	62	64	68	۰9	68	68	66	67	68	67
	315	6+	57	59	58	57	55	54	55	56	58	58	62	64	56	61	63	63	65	65
	400	69	61	62	61	62	61	57	59	55	58	59	60	65	52	60	63	63	65	64
	500	73	68	69	69	67	69	62	65	50	60	59	62	65	61	61	63	6.3	64	62
	630	67	65	65	65	66	66	60	62	61	61	60	62	65	61	62	6.3	6 !	64	62
	800 1000	64 66	60 64	61 62	61 63	62 63	62 62	61 59	59 59	60	61	61	63 63	65	61	63 63	64	63 65	64 65	61
	1250	68	65	63	64	63	62	61	63	60 59	61 59	61 59	63	64 64	61 62	65	64 66	68	65	61 61
	1600	69	67	65	65	64	62	61	59	60	59	58	62	63	63	66	64	62	63	59
	2000	62	62	60	60	59	57	56	55	56	57	56	60	62	62	62	58	58	59	e.6
	2500	53	52	53	55	54	51	50	53	53	54	55	58	61	56	57	55	56	56	53
	3150	47	47	46	48	48	46	48	46	52	52	53	57	57	53	54	54	54	55	52
	4600	46	46	44	45	45	44	48	48	51	51	53	56	54	54	54	53	54	54	53
	5000	49	48	45	47	46	444	45	45	49	50	50	52	51	51	51	51	50	52	50
	6300	49	47	44	45	44	43	45	44	48	49	49	50	50	50	50	50	49	50	49
	8000	48	47	4.3	44	44	45	45	45	47	49	69	50	50	55	50	50	49	50	49
	10000	46	45	43	44	43	42	44	44	45	46	48	49	49	50	48	49	4.6	49	49
	OVERALL	100	99	97	101	100	103	102	104	104	106	107	198	110	110	109	110	111	112	112

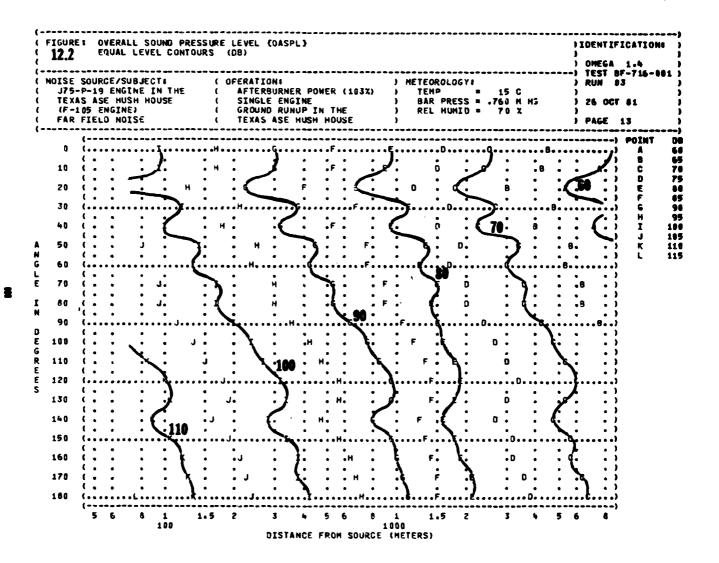


_____



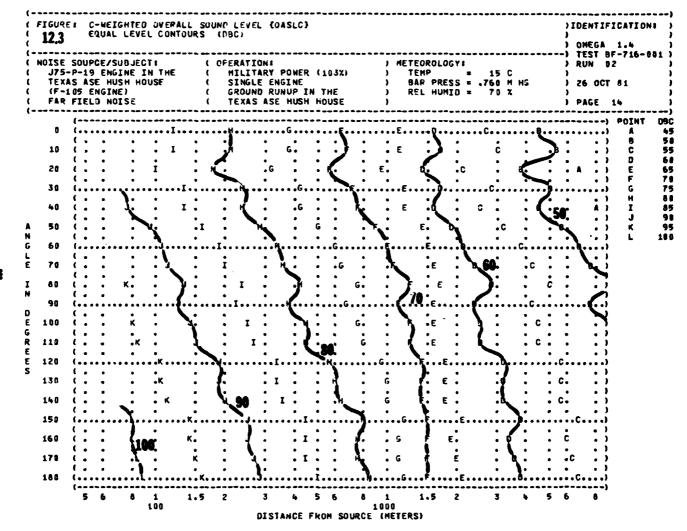


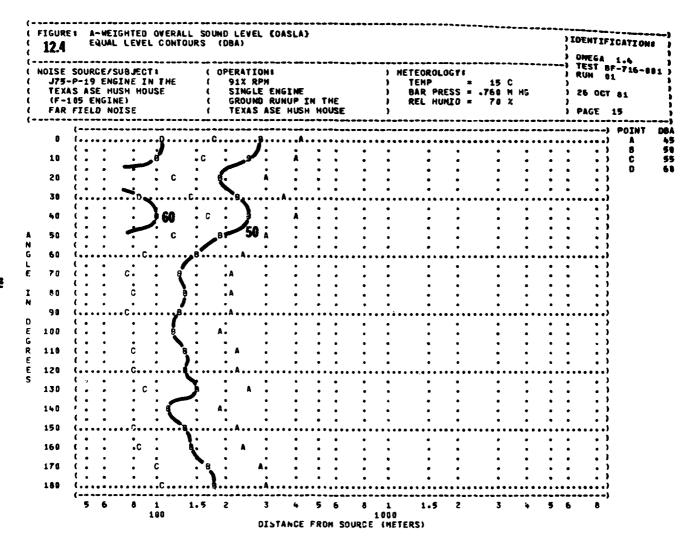




TEXAS (F-105	URCE/SI 19 ENG! ASE HU! ENGINI ELD NO!	INE IN SH HOUS E)	THE	( (	GROUND		IN THE		) TE	R PRESS	= 15 = .760 = .70	H HS		) OMEGA ) TEST ) RUM ) ) 26 OC ) ) PAGE	8F-716-0 01 OT 81
(-0 (.) 10 (.) 20 (.) 30 (.) 40 (.) 50 (.) 60 (.) 100 (.) 110 (.) 120 (.) 140 (.) 150 (.)		G H	G G G	G. G	6 6	E	70	E			350	A .	A		

.

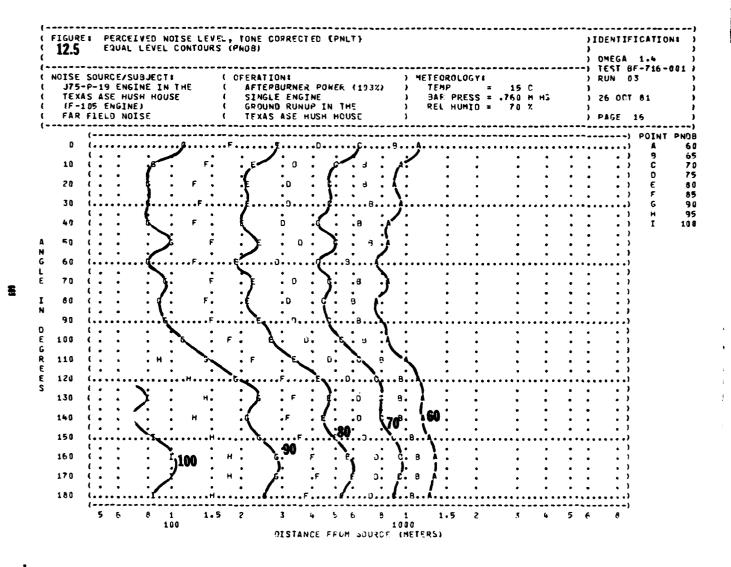




£

-

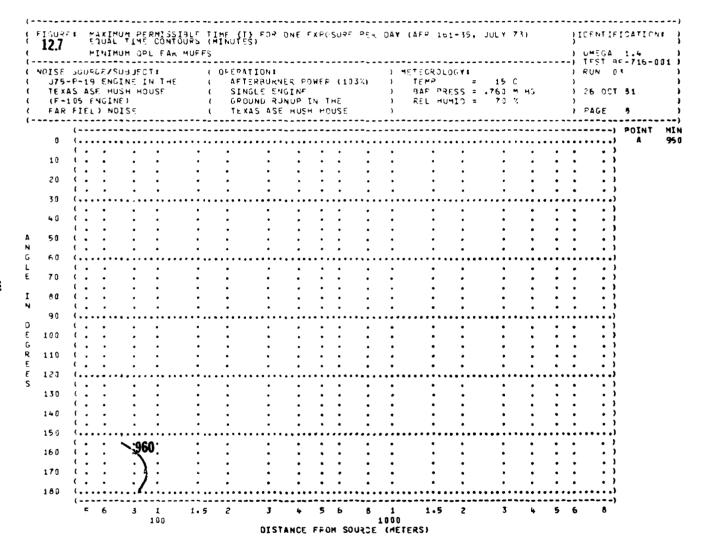
AIR FORCE AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATT--ETC F/G 20/1 USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK. VOLUME 172. HUSH-HOU--ETC(U) AD-A118 773 UNCLASSIFIED AMRL-TR-75-50-VOL-172 8 05 9 18 1/3



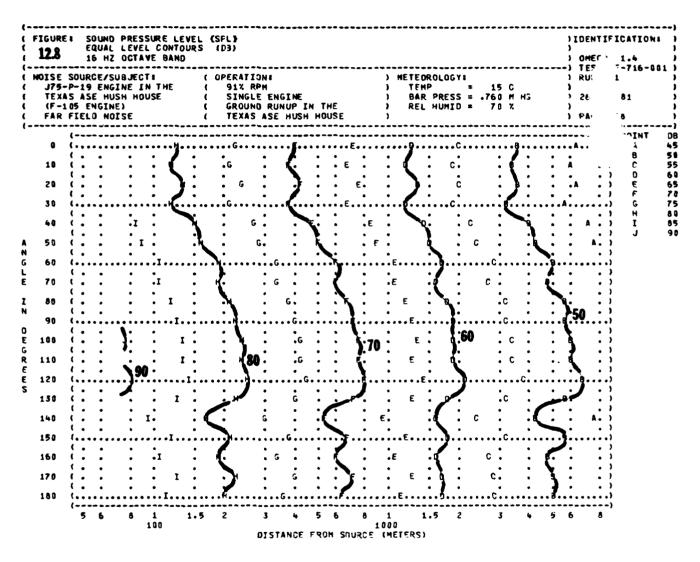
DISTANCE FROM SOURCE (METERS)

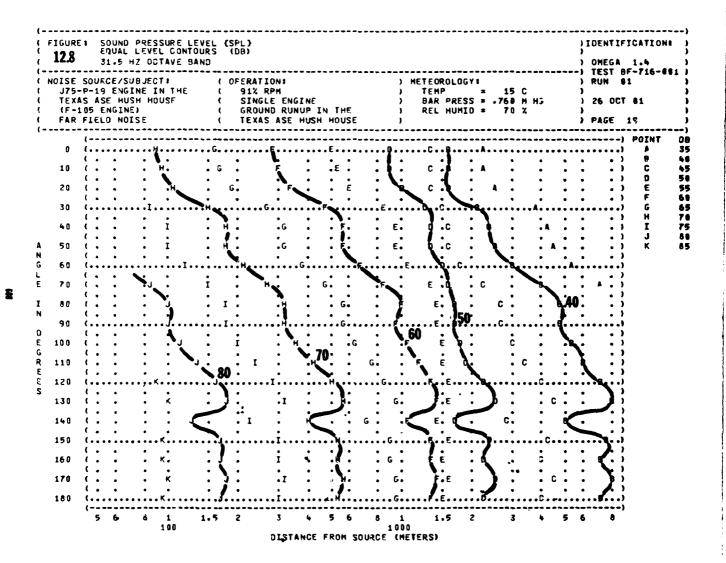
DISTANCE FROM SOURCE (METERS)

5



DISTANCE FROM SOURCE (METERS)

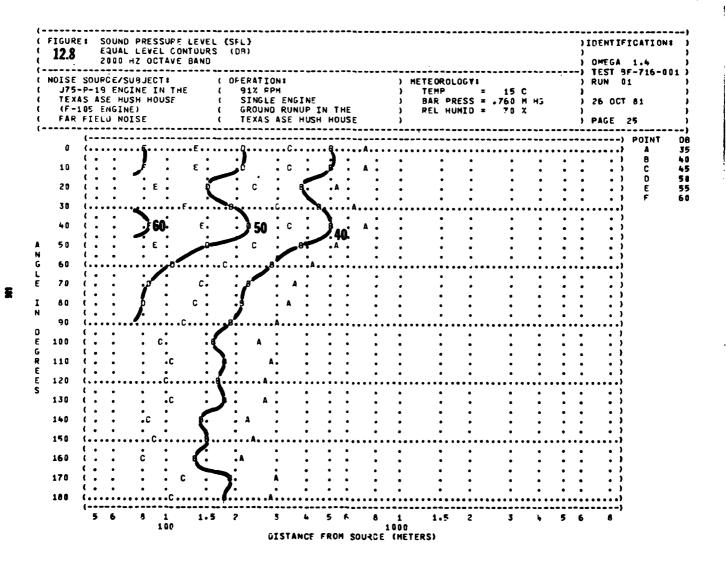




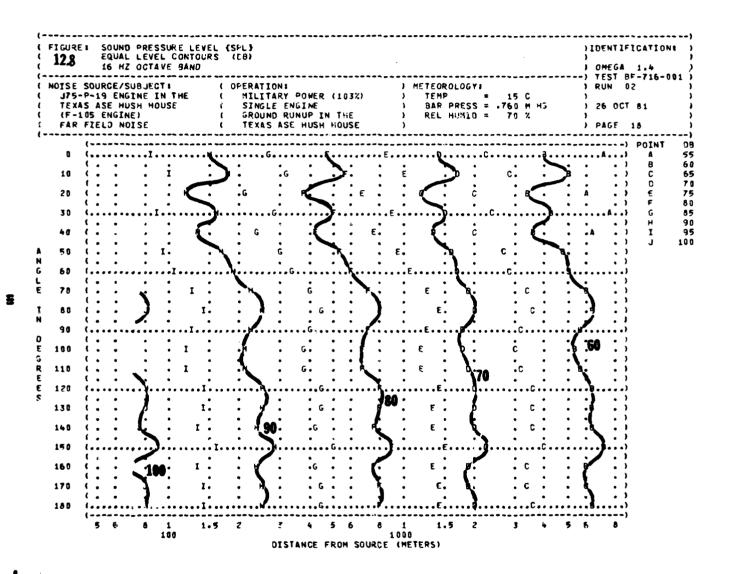
Ξ

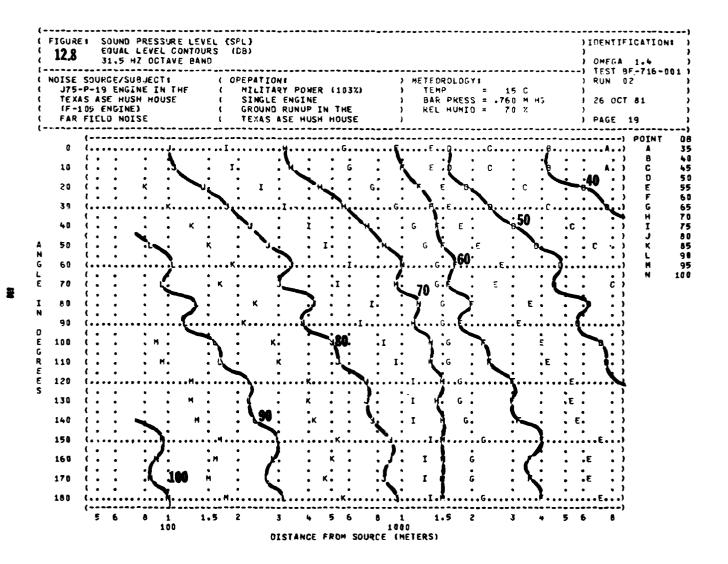
Ŧ

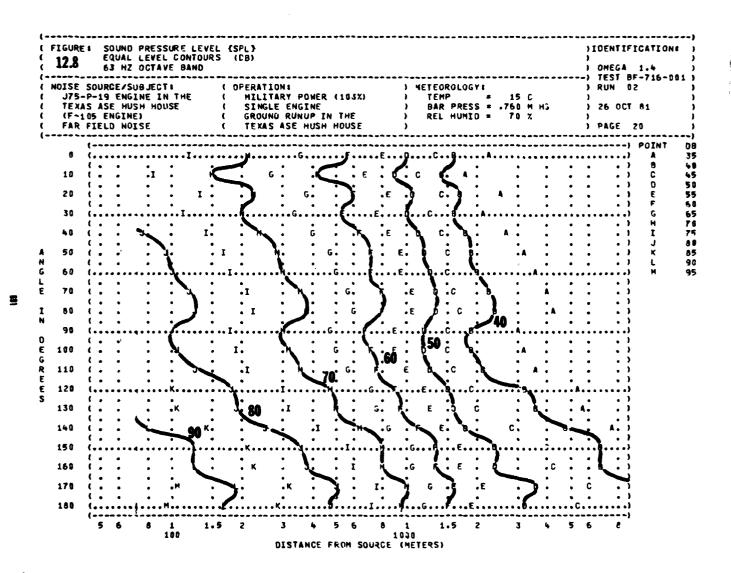
ş



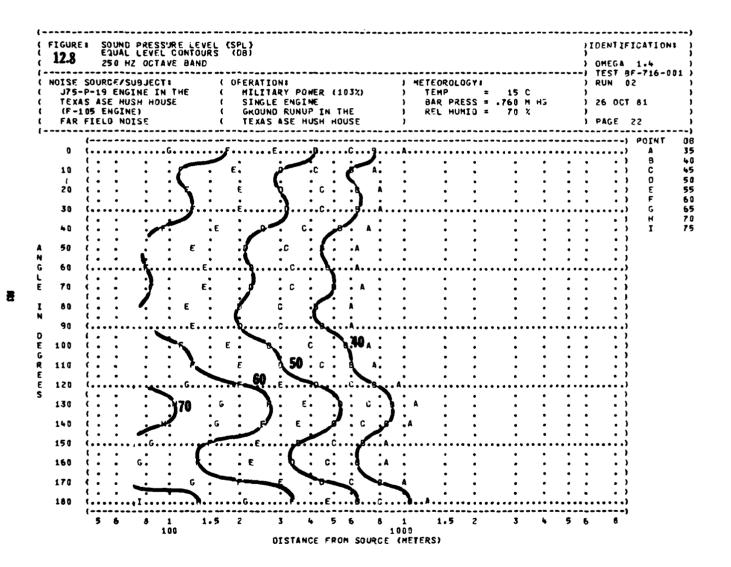
10 C.50 A A S A S A S A S A S A S A S A S A S	-) POINT -) A -) B -) C -) D -) -) -) -) -) -) -) -) -) -) -) -) -)
128 C A	) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )



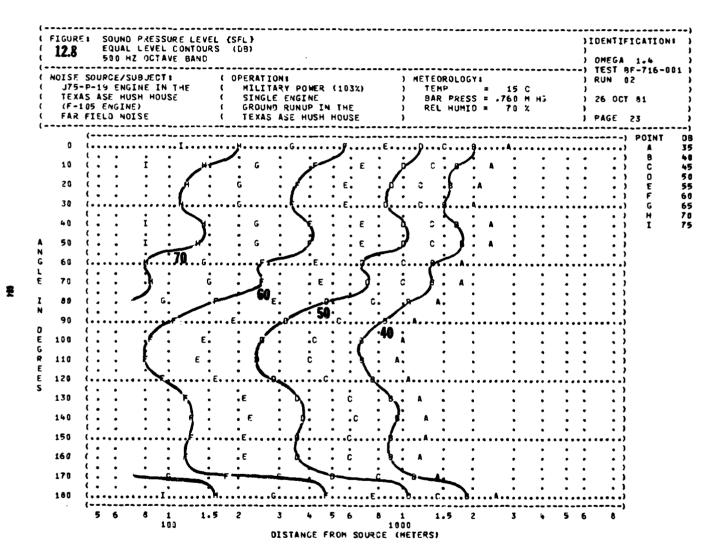


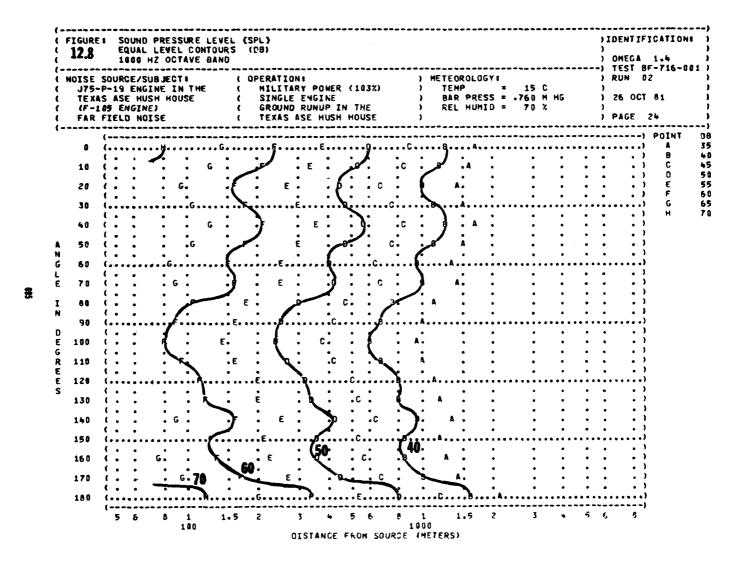


_____

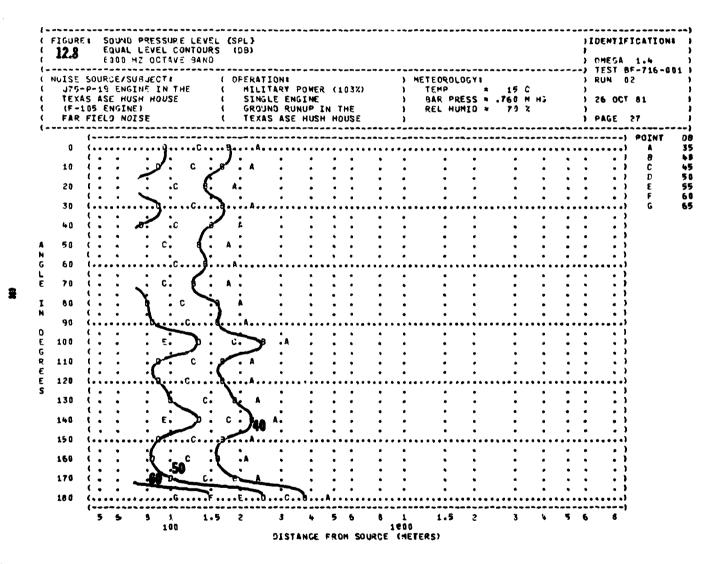


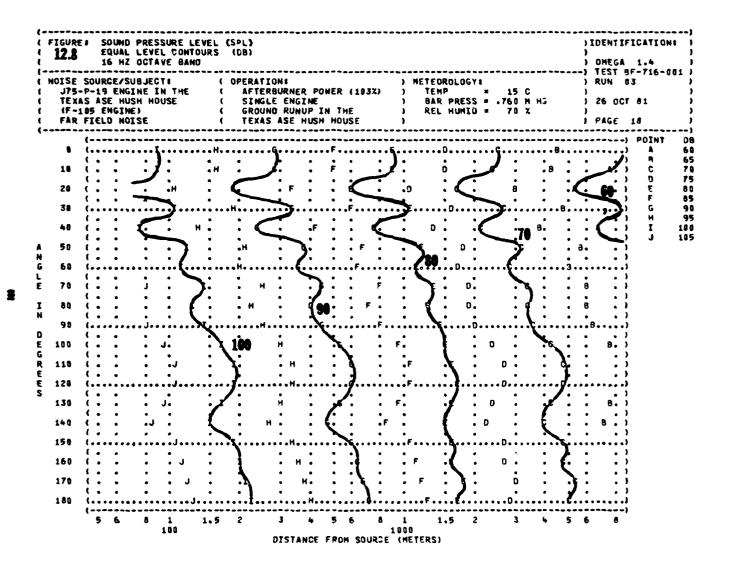
بناء الساستين كي

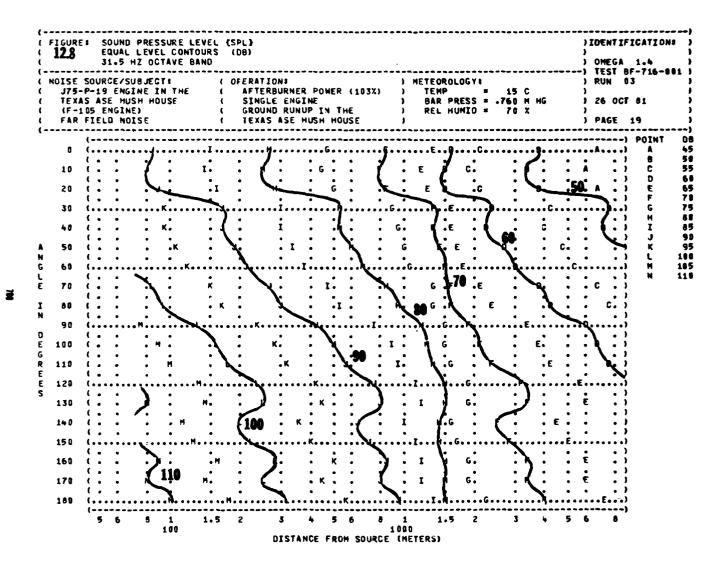


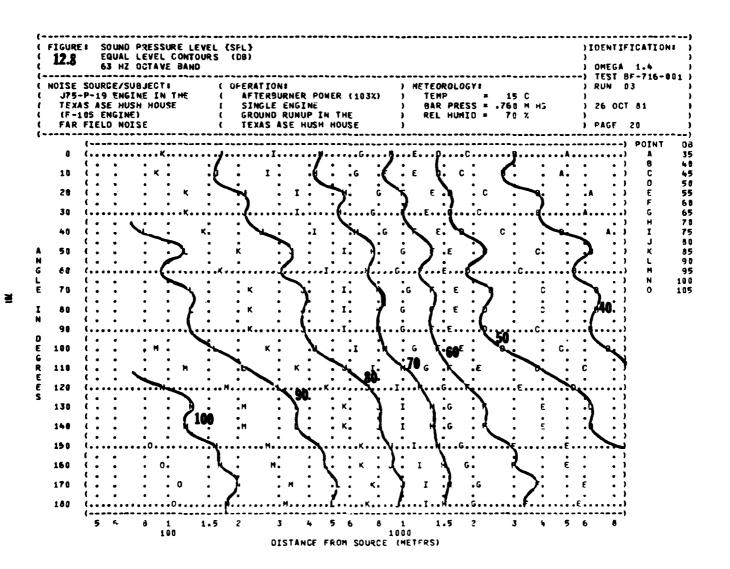


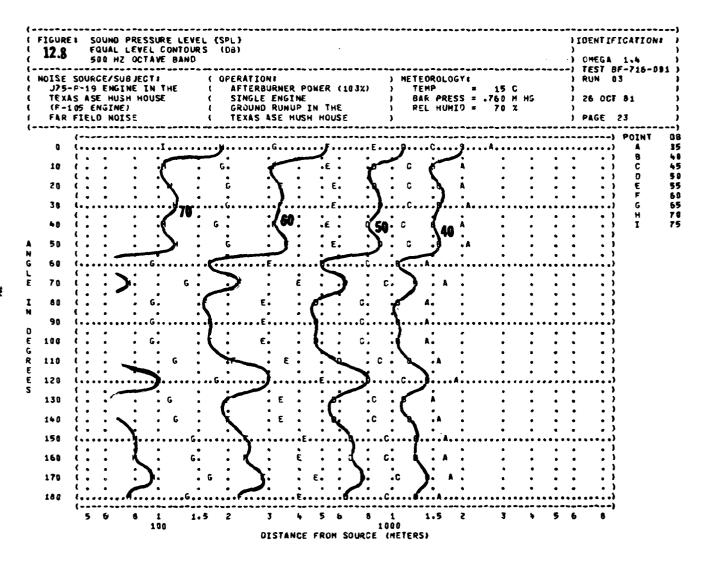
=





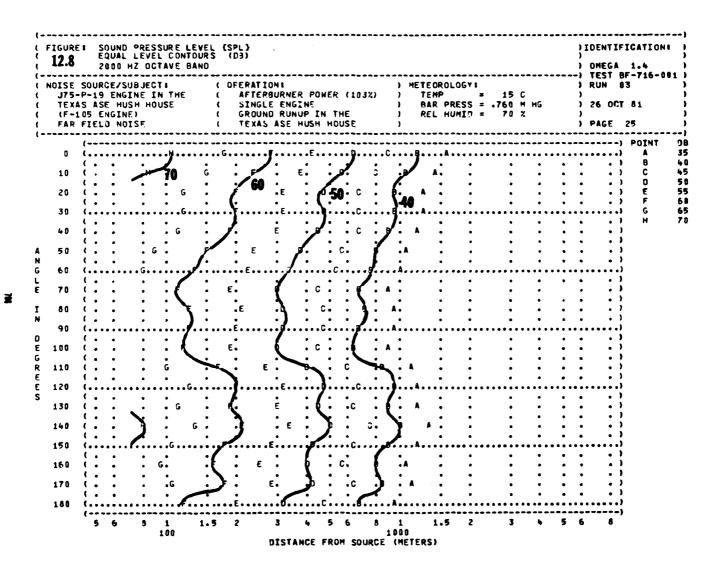


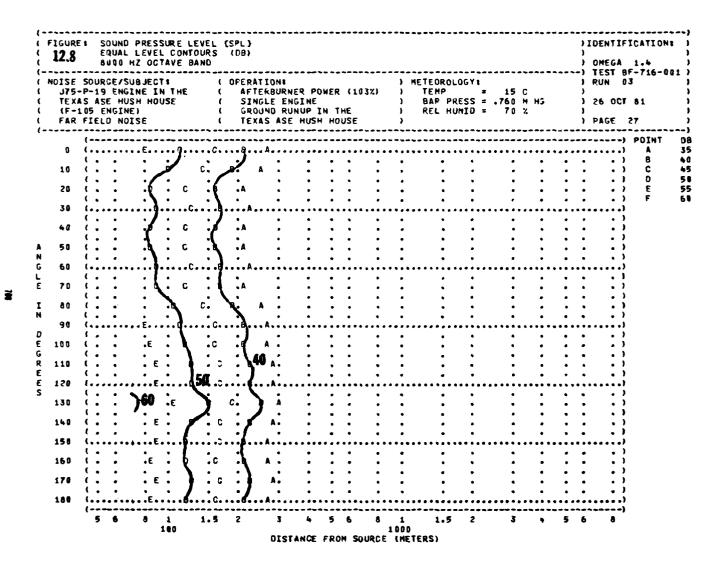




______

Š





## **TABLE 13.1**

## TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS J75-P-17 ENGINE IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-717-001 (Engine For The F-106 Aircraft)

Engine Operation	S	ingle Engine
90%	ځ مو	% RPM
	4597	LBS/HR FF
	737	EGT
Military Power	103	% RPM
	11709	LBS/HR FF
	1117	EGT
Afterburner Power	103	% RPM
	1112	EGT
Meteorology		
Temperature	32	С
Bar Pressure	.741	M Hg
Rel Humidity	45	% ·
Wind - Speed	3	M/Sec (6 Kts)
- Direction	140	Deg

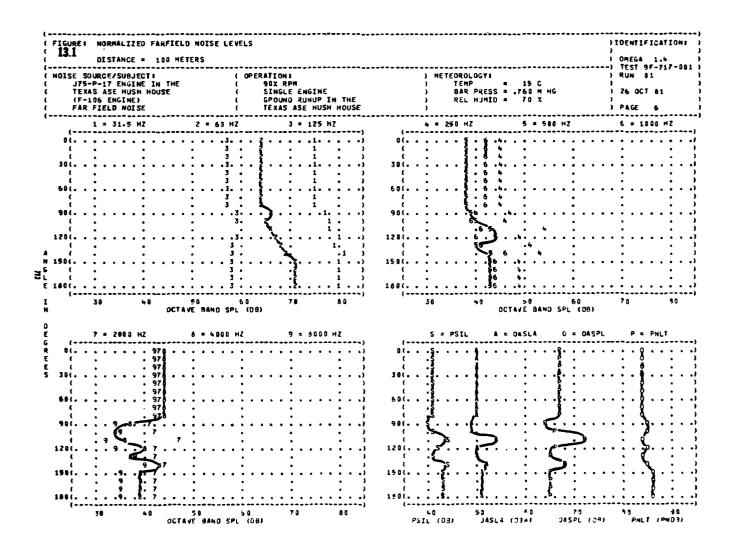
OISE SOURC J75-P-17 TEXAS ASE (F-106 EN FAR FIELO	ENGINE 1 HUSH HO GINE)	CTS EN THE			GROUND	NI M ENC	SINE NUP IN	THE	• • • •		ETEUR TEM BAR	ROLOGY PRESS CIMUNI	± = •7	32 C	43	) ) )	OMEGA TEST PUN 26 OC PAGE	BF-71 01	
FREQ								Ah	GLF	OEGR	FFS)								
(HZ)	0	10	20	30	40	5 Q	60	70	80	90	100	110	120	130	1+0	150	160	170	180
12.5	78	78	78	78	78	78	76	78	78	76	/9	77	78	77	77	77	77	77	77
16	80	80	80	88	80	80	80	80	80	79	79	77	77	78	78	81	81	81	8:
20	76	76	76	76	76	70	76	76	76	76	17	79	80	78	75	8.0	60	80	8
25	73	73	73	73	73	73	73	73	73	76	76	77	78	76	78	77	77	77	7
31.5	65	65	65	65	65	65	65	65	65	68	70	70	74	73	75	75	75	75	7
40	65	65	65	65		65	65	65	65	67	65	67	69	70	73	72	72	72	7
50	61	61	61	61		61	61	61	61	63	62	63	64	66	69	70	70	70	7
63	58	58	58	58		58	58	Fa	55	60	60	60	63	61	59	62	62	62	6
80 100	57 55	57 55	57 55	57 55		57	57 55	57 55	57	56	>6	57	58	57	50	56 53	56	56 53	E,
125	51	77 51	51	22 51		55 51	>> 51	51	55 51	56 55	55 57	56 65	55 56	55 54	53 54	53 54	53 54	54	, E
160	46	46	46	46		46	46	46	+6	48	47	56	43	49	49	46	48	48	4
200	42	42	42	42		42	42	42	42	45	-4	48	46	49	50	45	45	45	
25 0	43	40	40	40	40	41)	40	40	48	42	41	51	45	46	49	44	44	44	4
315	34	34	34	34	34	3+	34	34	34	37	36	47	43	38	40	40	40	40	4
400	32	32	32	32	32	32	32	32	32	34	36	41	41	35	36	38	38	38	3
500	32	32	32	32	32	32	32	32	32	34	35	35	38	35	40	38	38	38	3
630	34	34	34	34		34	34	34	34	34	35	35	37	34	39	36	38	38	3
800	35	35	35	35		35	35	35	35	35	34	37	35	35	43	37	37	37	3
1000	37	37	37	37	37	37	37	37	37	34	35	36	35	36	39	+ 0	40	40	4
1250	36	36	36	36	36	36	36	36	36	34	33	34	33	35	38	39	39	39	3
1600	36	36	36	36		30	36	36	36	34	31	34	35	37	40	38	38	38	3
2000 2500	41 36	41 36	41	41 36	41 36	41 36	61 30	41 36	41 36	38	41	46 34	39 33	39 33	39 35	38 34	36 34	36 34	3
3150	37	36 37	3 c 3 7	36 37		37	36 37	36	37	33 31	32 29	34 31	33	33	35	34	34	34	31 21
4000	41	41	<b>b</b> 1	41		41	41	41	41	34	30	31 32	37	32	40	34	33	33	3
5000	35	35	35	35	, -	35	35	35	35	28	27	28	33	31	39	32	32	32	3
6300	38	38	36	36	36	36	36	38	38	29	27	27	32	29	37	30	30	30	3
8 0 0 0	36	36	36	36		36	36	36	36	29	28	28	27	31	34	29	29	29	2
10000	38	38	36	38	36	38	38	38	38	30	35	27	So	37	35	33	33	33	3

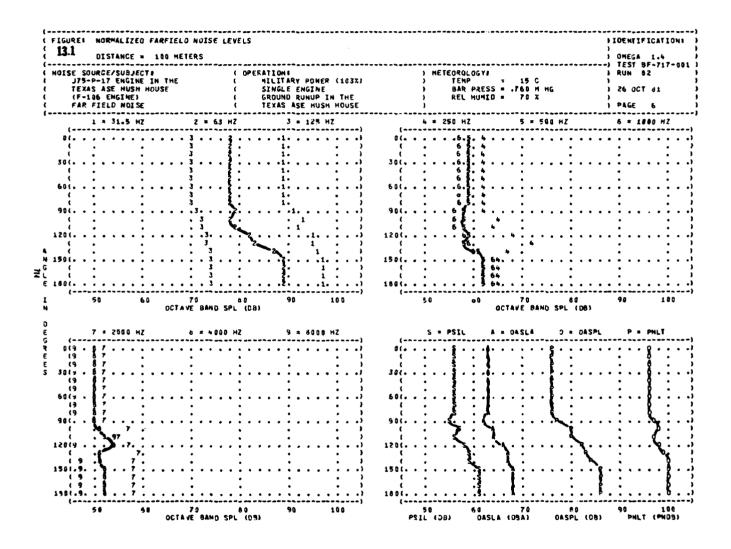
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

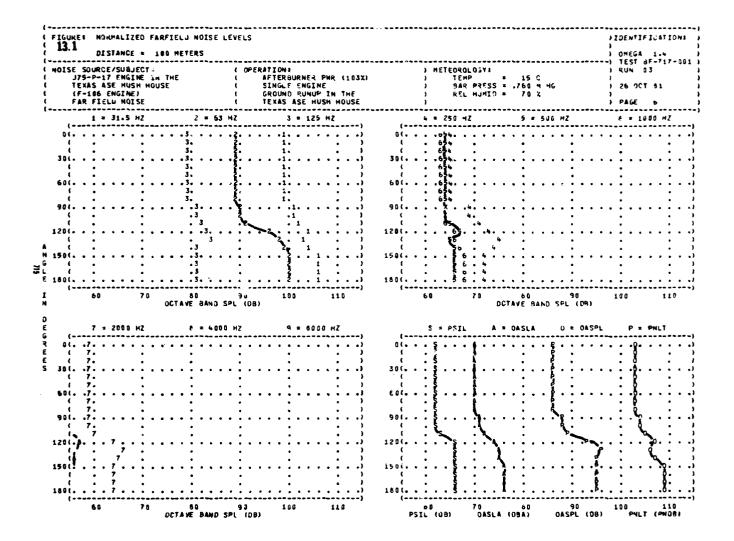
13 2	MEASURED 1/3 OCTA DISTANCE	VE BAN	10		TEAET.	(08)										)	OMEGA TEST	1.4	,
	RGE/SUBJ		ıF	( 0	PERATION		POWER	(103%)		) H	ETEO!	ROLOGY	1 =	32 C		)		g 2	
	SE HUSH		-	Ċ	SINGL					j		PRESS			H5	, i	26 00	T 81	
(F-106	ENGINE)			(	GROUN	RUI	NUP IN	THE		>	REL	HUHID	=	45 %		)	-		
FAR FIE	TO NOTSE			(	TEXAS	ASE	HUSH	HOUSE		)						)	PAGE	2	
FREQ								A.	161 5	(DEG	EES)								
(HZ)	J	10	20	30	40	50	69	70	30	98	100	110	120	130	140	156	160	170	180
						• •													
12.5 16	69 90	89 90	89 90	89 90		89 90	89 90	89 90	99 90	90 90	89 93	89 92	59 91	9 <b>9</b>	89 92	98	90 90	90 90	91
20	90	90	90	90		90	90	90	40	90	92	90	91	92	92	90	90	90	91
25	96	88	36	66		88	68	50	83	90	91	90	93	93	93	93	93	93	9:
31.5	5.0	80	80	80	80	80	83	οB	00	84	66	86	33	89	91	91	91	91	9
40	77	77	77	77	77	77	77	77	77	79	81	32	đó	36	90	90	90	90	91
50	75	75	75	75	75	75	75	75	75	76	74	74	78	42	86	86	88	88	68
63	71		71	71		71	71	71	71	74	75	76	73	74	77	31	81	81	8:
8 0	70		70	70		70	70	7 G	70	73	70	71	75	73	74	74	74	74	74
100	67	67	67	67	•	6/	£7	67	67	68	69	68	71	70	70	70	70	70	71
125	65	65	55	65		65	65	65	65	65	JB	66	55	67	69	70	70	70	7
160	63	60	60	60		60	υÜ	60	00	62	64	65	66	58	66	64	64	64	64
200	28	58	56	58		58	58	56	25	60	53	61	65	70	64	61	61	61	61
25 0 31 5	56 53		56 55	56 55		5 a 5 5	56 55	56 55	56 55	56	60 52	<del>5</del> 9	63 56	67 57	63 55	62 57	62 57	62 57	68 57
430	51	99 51	51	77 51		51	51	55 51	51	+6 49	50	55 52	54	51 52	77 56	56	56	56	56
500	5 ź		55	55		55	55	7 A	55	53	25	53	54	53	55	57	57	57	51
630	56		56	5É		56	56	56	50	56	52	54	55	53	26	58	58	58	5
800	52		52	52		52	52	52	32	52	51	52	53	53	55	96	59	59	5
1000	52	52	52	52	52	52	52	52	52	50	51	51	52	55	55	59	59	59	5
1 25 0	51	51	51	51	51	51	51	51	51	50	50	51	52	54	55	58	53	58	56
1600	43	49	49	49	49	49	49	49	+9	48	52	50	52	55	55	55	55	55	5
2000	45		46	46		+5	46	46	45	47	>3	50	53	56	51	51	51	51	51
2500	4.4		44	44		44	44	44	44	45	0 ز	48	52	50	47	+9	49	40	49
3150	+5		45	45		45	45	45	45	44	47	48	49	47	47	48	48	48	4.5
4000	+6		46	+6	. •	46	46	46	46	45	46	46	40	46	47	47	47	47	41
5000 6300	44		44 43	44		44	44 43	44	44	43	42	45	43	44	45 44	45 43	45 43	45 43	49
6010	43		43	43	-	43	43	43 42	43	42 41	+1 41	+2 51	40	42	43	43	43	<b>43</b>	4.3
10000	33		35	39		39	39	39	39	38	38	52	37	39	41	41	41	41	4
	3,		•	7,			-,			55		7.	٠,	,,	7.4	7.	7.	7.	-7.6
OVERALL	. 96	96	36	90	95	96	96	96	36	97	2.0	97	98	90	9.9	39	99	99	99

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

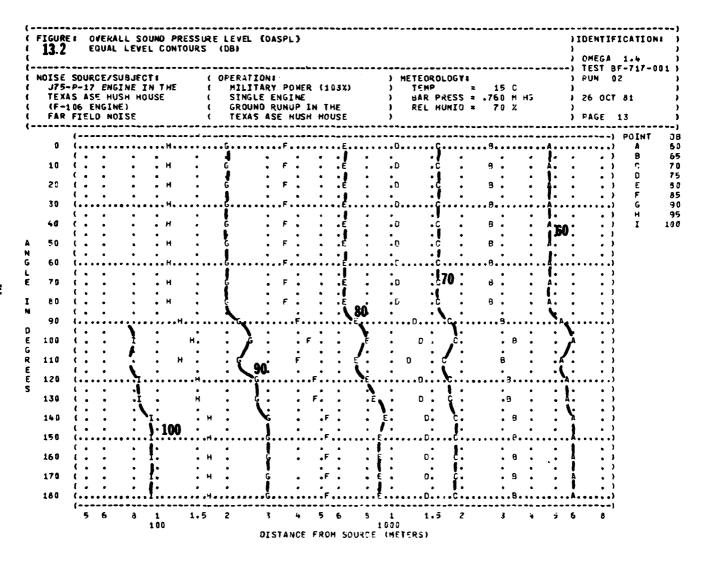
	29 1/3	SURED S OCTAV Stance	E BAN	0		LEVEL	(09)										)	OMEGA TEST	1.4	•
40	ISE SOURCE	E/SU9JE	CT:		( OP	ERATI	ONE				) H	ETEGA	OLOGY	:				PUN		
	J75-P-17 (	NGINE	IN TH	E	(	AFTER	BURNE	R PNR	(103	X)	)	TEN	•	=	32 C		)			
	TEXAS ASE	HUSH H	OUSE		(	SINGL	E ENG	INE			)	BAR	PRESS	= .7	41 H	HG	)	26 00	T 81	
	(F-106 EN	SINE)			(	GROUN	D RUN	UP IN	THE		)	REL	CIPUH	=	45 %		)			
	FAR FIELD	NOISE			(	TEXAS	ASE	HUSH	HOUSE		)						)	FAGE	2	
	FREQ								Δ	NGL F	( DEGR	FFSI								
	(HZ)	0	10	20	30	40	50	0 ه	70	40	90	160	110	123	130	140	150	160	170	160
		•						••	. •	• •									-, -	•
	12.5	94	94	94	34	94	94	94	94	34	3+	94	95	30	95	97	36	96	36	9(
	16	95	96	96	96	96	96	96	46	95	96	96	98	95	97	98	99	99	99	99
	20	97	97	97	97	97	97	97	97	37	99	99	98	97	96	99	101	191	101	10:
	25	95	96	96	96	96	96	96	96	36	98	98	dó	100	99	100	138	100	100	10
	31.5	93	93	93	33	93	93	93	93	93	96	96	96	93	38	98	130	180	100	10
	40	90	90	90	90	90	90	90	90	30	93	93	94	93	96	99	101	101	101	18
	50	85	85	35	85	85	85	85	85	85	85	05	87	95	96	97	39	99	99	9
	ó3	84	84	84	84	34	84	64	84	46	85	65	84	87	31	92	34	94	94	9
	8.0	8 2	82	32	82	82	92	82	82	82	82	82	96	85	67	82	36	86	86	6
	100	73	78	76	78	78	78	78	76	78	79	79	80	80	9.5	79	79	79	79	7
	125	71	71	71	71	71	71	71	71	71	74	74	74	77	76	7 2	75	75	75	79
	160	66	66	56	66	66	66	66	66	65	70	70	71	72	73	72	71	71	71	7
	200	63	63	63	63	63	63	63	63	63	57	67	69	73	72	70	69	69	69	6
	250	63	60	60	60	60	60	68	6.0	0.0	64	54	66	63	71	70	0.6	68	68	6
	315	56	56	56	56	56	56	50	56	55	57	57	59	63	52	63	63	63	63	6.
	÷0 0	58	58	56	58	58	58	58	58	55	57	>7	59	62	59 59	59	61	61	61	•
	500	60	60	60	60	60	60	60	69	60 50	59	>9	60	63	5 G	52	61	61 61	61	6: 6:
	630	60	60	60	0.0	69	60	60	60 59	59	60 60	6 0 6 0	60	6?	5 U	61	51	61	61 61	6
	800	59 5 <i>1</i>	59 <b>57</b>	59 57	59	59 57	59 57	59	57	57	58	50	60	51 61		61 02	61 61	61	61	6
	1000 1250	57	57	57	57 57	57 57	57	57 57	57	57	57	57	59 58	69	51 61	63	64	64	64	6
			55		57 55	57 55	57 55	-		57 55	55	91 35	56	53		63	62	υ2	62	6.
	1600 2000	>5 54	54	55 54	54	54	99 54	55 54	55 54	54	54	56	55	53	62 63	5g	57	67	57	5
	2500	51	51	51	51	51	51	51	51	51	52	52	53	53	55	53	3ز	53	53	5
	3150	50	50	20	58	50	50	50	50	50	50	50	51	55	52	52	51	51	91	5
	4000	50	50 50	50	50	50	50 50	50	50	50	50	50	50	رو 1 ذ	ى د نا د	50	<b>91</b>	51	51	ξ,
	5000	48	45	48	90 46	48	48	90 48	48	48	47	47	47	47	47	47	47	47	47	4
	6300	46	46	46	46	46	46	46	46	+6	46	46	45	43	48	46	46	46	46	40
	8000	46	46	46	46	46	46	46	46	46	45	45	45	44	45	46	46	46	46	4
	10000	43	43	43	43	43	43	43	43	43	42	42	42	42	43	44	44	44	44	4
	OVERALL	103	103	103	103	103	103	103	103	103	104	104	105	10 à	106	1 07	108	108	108	10







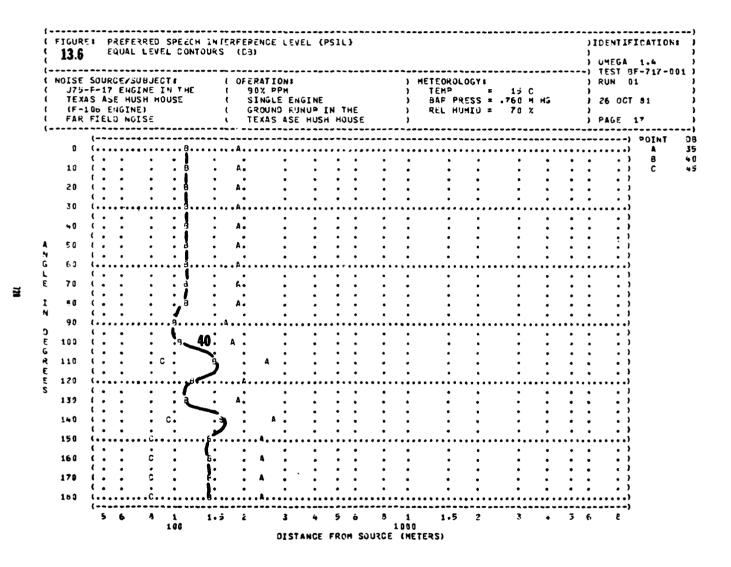
13.2	· 	E Q	EKALI UAL I	. EVE	r c			s (	D9)			}											)  )	OME	GA ST =	1.4 1.7 17-7	
			E/SUE ENGI			ue.			FERA 90%							MET	EOROL EMP			15 C			)	RU	• 0	) 1	
			HUS									NE								760 4	нэ		í	26	001	T 51	
			GINE								PUNU						EL HI	JHIO	) =	70 %			)	PA			
			NOI								ISE H					, 									, c	13 	
	- (-						:														•••				)	POINT	
0	(	• • • •		••••	• • • •	••••						••••	1		• • • •	••••	Ĭ.	• • • •		• • • • • •	3	• • • •	•••	• • A (	)	9	
10	Ċ	•	•	. I	•		·	į	•	G		. (	•	•	• E	•	Ď.	•	С	•	á		•	. 4	. )	C	
20	(	•	•		•		: !	•	•	G		•	ļ	•	• • E	•	Ċ.	•	c	•	1	•	•		• )	D E	
	i	:	•	: 1			- (	j	:	•		•	•			•	1.			·	ĺ	:		_	. ;	F	
30	- (	• • • •	• • • •	· · · I	• • •	••••		4	• • • •		••••	••••	F	• • • • •	٠٤	••••	· Ď · · ·	•••	-C	• • • • • •	.B	• • • •	• • •	A	• • •)	G H	
46	ì	:	:	: 1	:		إز	,	:	6	,		F	•	• • E	•	D.	:	С	:	3	:		. A	. )	ï	
	(	•	•	• _	•		• 1	1	•			•	j	•	•_	•	1.	•		•	Į,	EN .	•		. )		
59	. (	•	•	. I	:		٠,٠	1	:	G		. '	1	•	•E	•	0.	•	С	•	1	50 .	•	. A	• )		
60	•	• • • •	••••	I	•••	••••		ł	••••				ř.,		.E	••••	. Ď	••••	.c	•••••		••••	• • •	A .	•••)		
70	(	•	•	•	•		:	ļ	•	G.		•	-	•	. E	•	r.	•	С	•	•	•	•	Δ.	• )		
, ,	ċ	:	:	: -	÷		-1	i	:	٠,			i		•	•	į.	:	•	:	ĺ	:		_	. ;		
60	(	•	•	• I	•			1	•	G.		• 1	Ĺ	•	٤.	•	D TO	•	C	•	3	•	•	. A	• )		
90	÷.		•	•	ı			١	•			•	۹ . E		E		0	•				8					
	ŧ	•	•	•	·		•		•	•		•	. ]	•	• _	•	1	•		•	•	<b>j</b> .			• )		
100	(	:	•	:	Ι.		:	7	:	9	,	:	ï	•	. E	•	ı	•	С	:	Ż	٠ •	:		. )		
110	i	•	•	•	ı.		•	1	•	G.		. (	<b>7</b> 0	•	• E	•	Ď	•	C	•	3.	•		. A	. )		
120	- (	•	•	•			•		•			•	•	•	•	• F	h	•		•		e	•	!	• ) ( • • (		
	i	• • • • •		• • • •	•	••••	•	7	•	• • • •		•	.)	•	•	•	1.	•	••••	•	ij	•	•		• )		
130	•	•	•	•	I.		•	(80	r	8	,	• }	_	•	• F	•	Ď.	•	Ç	•	9.	•	•	. Δ	• )		
140	(	:	:	:	Ť		:	12.	•		G	•	<b>\</b> E		. ε	•	<b>V</b> ;	:	С	:	ľ	:	:		• )		
	Ċ	•	•	•	•	_	•		•			•	. '	•	•	•	1	•				\ .	•		• )		
150	•	• • • •	••••	• • • •	•••	I	•••	• • •	Ħ	• • • •	••G•	••••	•••	·••	••••	••E••	D	• • •	••••		••		•••	• • • •	)		
160	ì	:		:	:	I	:		Ä		G	•	•	Ē	•	. ε	. 5	:	(	:	:	ģ.			. ;		
	(	•	•	•	•		•		9			•	•	٠Į	•	• _	٠Ĭ	•		•	٠	Į.	•		• }		
170	·	•	•	:	:		:		î			•	•	ï	:	• •	: 1	:		•	:	j.	:	,	• ;		
180	(	• • • •	••••	• • • •	• • •	ı	•••	• • • •	Ă	• • • •	G .	••••	• • •	.F	• • • •	E		• • •	••••		• •	9.	• • •	• • • •	•••)		
	(	 5	·	8	1		1.5	 5	2			4		 5		1	1.5	2	,	3	· ·	5			8 8		
		•	•	•	100		- • •	•	•	,	•		- '	-		ōo	4.7	-		•	~	•		•	•		



Ħ

ž

Ħ

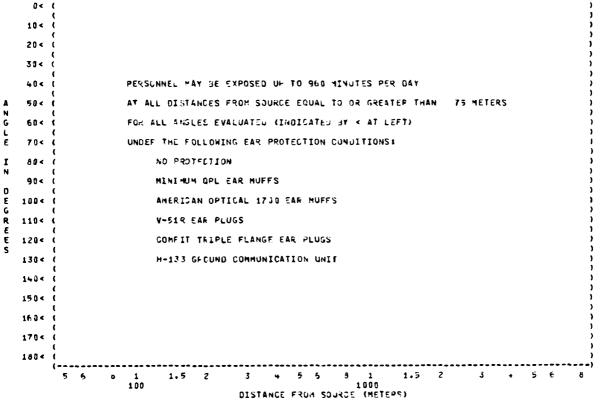


OISE J75- TEXA (F-1 FAR	P-	17 ASE	ENGI N HUSH	I IN	THE		(	FERATI AFTER SINGL GROUN TEXAS	BURN E En	IGI INU	NE P IN	Тн	03%) E		) M } )	TEMA BAF REL	PRESS HUMI	= S =	15 .760 70	H 4		· • • •	OMEGO TEST	O O CT	F-717-( 3 81
0	(-·	 • • • •	 ••••		 :	ţ	· • • • • •	.E	9	}	 	.c.	••••	9	A	••••	• • • • •	• • • •	• • • • •		•	• • • •	• • • • • •	-)	POINT A B
10	(	•	•	•	•	F	•	•E	• 1	) )	:	.c	:	ē ■	, A	,		•	•		•	•	•	, )	C
50	(	•	•		:	Í	•	•E	. 0	ì	•	.c	:	3	. A	,	•	•	•	,	•	•	• •	. )	E
30	(	• • •	• • • • •	••••	••••	Ė	• • • • •	Ε	• • • •		••••	.c.	• • • • •	å	A	••••	••••	•••	• • • • •	• • • •	• • • •	• • • •	• • • • •	• )	G
4 3	{	•	•	•	•	F	•	.ε		)	:	.c	•	á	. A		•	•	•		•		•	, )	
50	Ċ	•	•	•	•	F	•	.€	•		•	ε.	:	à	. A			•	•		•	•		, )	
60	į.	•	• • • • • •	••••	· · · ·	F	•	. É			••••	.c.	•	B	. A	• • • • •		•	• • • • •	••••	•			.;	
70	į	•	•	:	:	F	•	.ε	Ö		:	.с	:	8	. A		•	•	:	,	•			į	
e 0	Ċ	•	•	:	:	F	•	E			:	.с	:	40	. A			•	:		•	•		į	
90	į.	•	• • • • •	•	· · · ·	F	•	έ				.c.	•••••	3	. A	• • • •	• • • • •	•	• • • •	••••	•	•		.;	
100	è	•	•	:	•	F	•	• •	• (		•	.c	:	à	. A	•	•	•		•	:	:	•		
110	è	•	•	.6	•	F	<b>_60</b>	. ε	•	ار		:	i	В	•	Α .	•	•		,	:	:	•		
120	į.	•	• • • • • •	•		•••		••••••	•Ē••	••	ړ 🗀	•	c.	<b>\</b>	3	A	• • • • •	•	• • • • •	• • • •	• • • •	•	•		
130	(	•	•	•	Ġ		:	:	Ę		: }		. c	•	3	Α.	•	•		•	:	•	•	, )	
140	(	•	•	:			: }	•	.E		: '	ķ	: 0	:	.9	g.	•	•	:	•	:	:	•	. )	
150	(.	•	•	•	• •• •		• • • • • •	<u></u>	· E · ·		••••	ļ			: į.	A	• • • • •	•	••••		•	•	•	)	
160	(	•	•	:	. G		•	•	Ē		. 0	) •	: 0	•		A	•	•	•	,	•	:	•	, }	
170	(	•	•	:	• • •		: }	•	Ė		: 8		: 0		••	Α.	•	•	•	•	:	:	•	, )	
1 0	(	•	•	•	•				• • • • • •		:			•	• <b>.</b>	4	•	•			•	•	•	)	

뀰

```
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ( 12 7 EQUAL TIME CONTOURS (MINUTES)
                                                                                                                                 DISENTIFICATIONS )
   13.7
                                                                                                                                   OMEGA 1.4
TEST 3F-717-031
  NOISE SOURCE/SUBJECT!
J75-P-17 ENGINE IN THE
TEXAS ASE HUSH HOUSE
                                                                                      ) METEOROLOGY:
                                                                                                                                 ) FUN 01
                                           ( OFERATIONS
                                                                                           TEMP = 15 C
BAR PRESS = .760 M HJ
                                                90% RP4
                                                SINGLE ENGINE
                                                                                                                                 ) 26 OCT 81
                                               GROUND RUNUP IN THE
TEXAS ASE HUSH HOUSE
    (F-106 ENGINE)
FAR FIELD NOISE
                                                                                            REL HUMIO = 70 %
                                                                                                                                 ) PAGE .
      0 <
```

_ :-



₹

```
FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-36, JULY 73)
         EQUAL TIME CONTOURS (MINUTES)
13.7
                                                                                                     ) OMEGA 1.4
                                                                                                       TEST 3F-717-001
NOISE SOURJE/SUBJECT:
J75-P-17 ENGINE IN THE
TEXAS ASE HUSH HOUSE
                                ( OFERATIONS (103%)
                                                                  ) METEUROLOGY:
                                                                                                       RUN 02
                                                                       TEMP = 15 C

BAR PRESS = .760 M H3

REL HUMID = 70 %
                                    SINGLE ENGINE
GROUND RUNUP IN THE
                                                                                                     ) 26 OCT 81
  (F-106 EIGINE)
                                                                                                     PAGE 7
  FAR FIELD HOISE
                                    TEXAS ASE HUSH HOUSE
   0 <
  10 <
  23 <
  30 <
  4 D <
                     PERSONNEL MAY HE EXPOSED UP TO 960 MINUTES PER DAY
  50 <
                     AT ALL DISTANCES FROM SUURCE EQUAL TO OR GREATER THAN
                                                                                  75 METERS
  60<
                     FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
  70<
                     UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
  004
                          NO PROTECTION
                          MINIMUM OPL EAR MUFFS
  93 <
 1834
                          AMPRICAN UPTICAL 1700 EAP MUFFS
 110<
                          V-517 EAR PLUGS
                          COMFIT TRIPLE FLANGE EAR PLUGS
 120<
 130 <
                          H-133 GECUND COMMUNICATION UNIT
 140<
 150<
 160 <
 170<
 180<
                                                           8 1
1900
                                                                         1.5 2
                            1.5 2
```

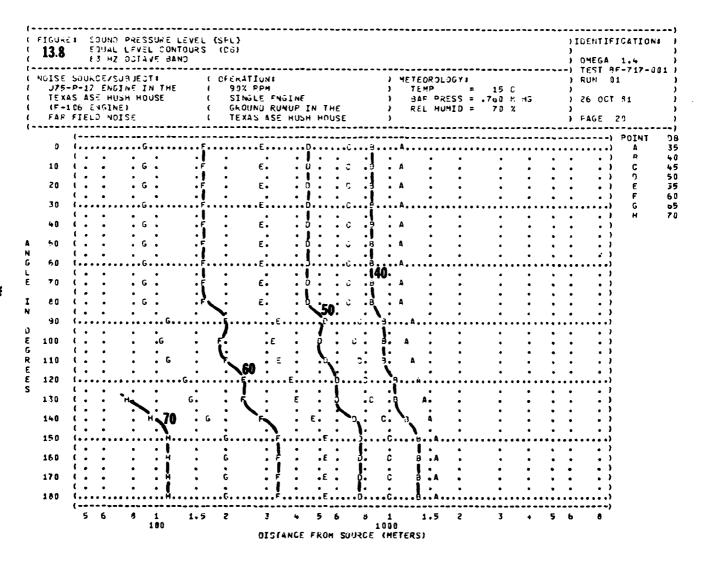
DISTANCE FROM SOURCE (METERS)

Ħ

```
FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
127 EQUAL TIME CONTOURS (MINUTES)
                                                                                                                ) ILENTIFICATION:
         13.7
                                                                                                                ) OHEGA 1.4
                                                                                                                  TEST 9F-717-001
        NUISE SOURCE/SUBJECTE
                                         ( OFECATIONS
                                                                            ) METEOROLOGY:
                                                                                                                  RUN 03
          J75-P-17 ENGINE IN THE TEXAS ASE HUSH HOUSE
                                                                                 TEMP = 15 C
BAR PRESS = .760 M H3
REL HUMIO = 70 %
                                             AFTERBURNER PWR (103%)
                                              SINGLE ENGINE
                                                                                                                ) 26 OCT 91
                                             GROUND RUNUP IN THE
TEXAS ASE HUSH HOUSE
          (F-106 ENGINE)
FAR FIELD NOISE
           8 <
          20 <
          30<
                              PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
          40<
          50<
                              AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN
                                                                                             73 HETERS
                              FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
          60 <
      £
                              UNDER THE FOLLOWING EAR PROTECTION CUNDITIONS:
          70<
뀰
      1
                                    NO PROTECTION
          80 <
                                    MINIMUM OPL EAR MUFFS
          90 <
                                    AMERICAN OPTICAL 1700 EAR MUFFS
         100 <
                                    V-519 EAR PLUGS
         110<
         120 <
                                   CONFIT TRIPLE FLANGE FAR PLUGS
                                    H-133 GROUND COMMUNICATION UNIT
         130 <
         140 <
         150<
         160 <
         1784
                                                                                   1.5 2
                                                                                                3 + 5 €
                                                                      6 1
1000
                              100
                                      1.5 2
                                                    3 + 5 5
                                                    DISTANCE FROM SOURCE (METERS)
```

· Larrence - 👡

귪



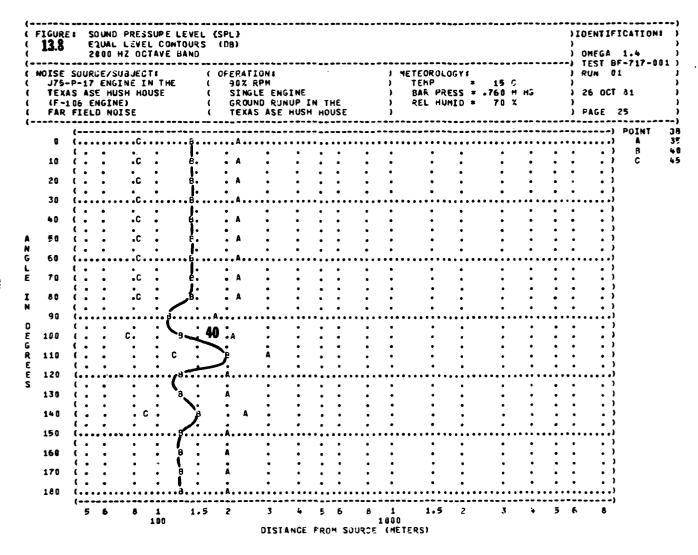
걸

_____

ž

à

J75-P-17 ENGINE IN THE TEXAS ASE HUSH HOUSE (F-106 ENGINE) FAR FIELD NOISE	( CFERATION: ) METEOROLOGY: ( 90% RPM ) TEMP = 15 C	-) TEST BF-717-0 ) PUN 01 ) ) 26 OCT 81 ) ) PAGE 24
0 (	A	
70	A	
130 (	A	· · · · · · · · · · · · · · · · · · ·



Z

ž

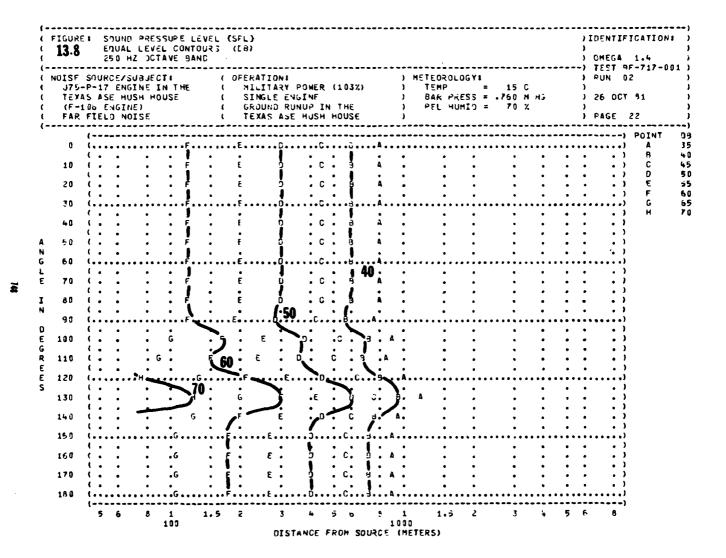
ž

____

Ħ

J75 TEX (F-	-P- AS	17 ASE	EN	JSH	E I	N TH	1E	(		SIN	ITA IGLE IUNC	IRY PE ENG D RUN ASE	INE	IN	TH	ξ.		)	METEORO TEMP BAR I REL I	PRE	ss	= = .7	60	M H3	***	1	PUN 26	0 C1	T 81
0	( , ,			•				i	•••	H H			G	• • •		, , , ,	Ε	• • • • • • • • • • • • • • • • • • • •	j :	8		A.			• • • •		•	• )	POINT A 9 C
2 <b>0</b> 30		•	•	§	• • • • •		• • • •	i	•			•		• • •			έ.,	• • •		. 9.		A.	···	•	• • • •	•	•	)	F
40 50		:	:	5	:	:		1.	•	H		:	G G	•			Ē E	• (	, .	8	: 10	A	:	:			· · ·	• ;	
60 70	į. (	:		5 }	: :	•	•••	ı	•••	H		•	. Ġ.	•••			Ė		50 c	. B.	•••	A.	•••	••••	•••		••••	)	
80	(	•	•	5					•	H		•	Ğ	,		<b>1</b> 60	_	• [	s :	B	<b>\</b> :	Ą	•	•	•	•	•	• )	! !
90 100	( ( (	:	•	• • •	٠,٠	); :	•••	i	•	•	7		G	• 6		)	. E			7	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	۸	· A ·	••••	•••		• • • • • •	.)	 
110	(		•			•		: I		I		<b>10</b>	Н	G .	•		, <u>s</u>	. E	D C	. C .		۸ يو	•	4				(	) 
130	( (	:	:		K •	:		180	) :		I	:	.4			G			Ε	٥	: :	9	·.	:	A :	•		• )	) }
150	( ( .	•	•		9	): :	к	٠,٨.	•••		``	. · . . · · · }	•	1.	H	.н.	5	•	E E	~~ ···	<b>)</b>		c	- 3.		3	, A	)	 
150	(	•	:		.	•		. K		•	į		:	I .	•		. 6	:	E E		8. 1.		.c	•				. )	,   
180	Ċ	•	•		·Ţ	•		•	•	,	1	ļ.	•		•	•	•	•	1 :		Į.		•	•	. !	Į .	•	. )	1

,



J75- TEXA IF-1	P-17 S A:	E HU	INE SH F	IN T		(	\$1 68 TE	LITA NGLE OUNC XAS	NI RY PO ENG! RUNI ASE I	ONER INE UP II	(10 N TH HOU	3%) (E (SE		) ) )	TETEC TEP BAR REL	OROLOG 1P R PRES L HUH]	Y: = SS = 10 =	15 •760 70	G M H			RUN 26 PAG	OCT	81
0 10 20 30		•	••••	F. F	•	. E.	•	i I I	 		c	• • • • •		A		•		•	••••	•		•	) - ) - ) - ) - )	POINT A B C D E F
<b>40</b> 50 60			•	1. F.	••••		•		•  •  •  •	•	c. c.	• !	3. 3.	. A . A	••••			•	••••	•			• ;	
70 80 90		•	/	֓֞֝֝֞֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	E.	E			) •   •   •	C	c.		) .   .   .	A		•	•	•	• • • •	•	•	• • •	• )	
00 18 20			F.	<b>)</b>	E	•		50		Ċ	c	8		A. A.			•		••••	•			• ;	
30 40 50			**	•	60 [*]		E. e.			ċ	C	.c	8	A .	\ ••A••		•	•	••••	•			• )	
68 70 80	( . (	•	•	•		•	3. 3.		•		•		•		A	•	•	•		•		•	• }	

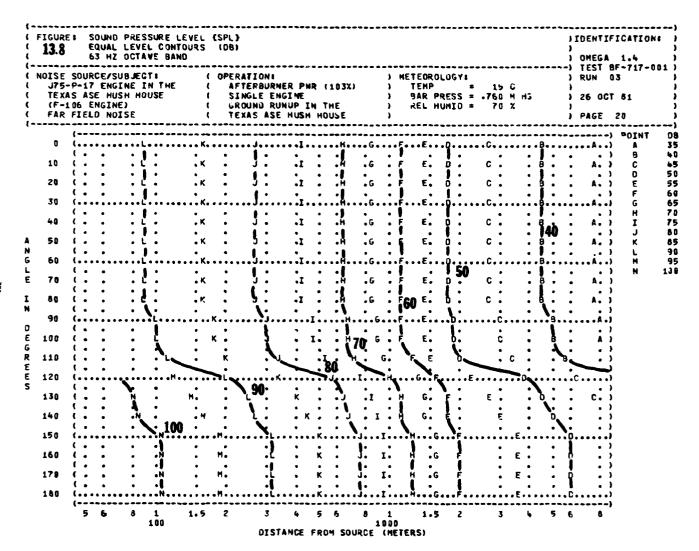
.

. . . . . . . . .

ã

X.

¥

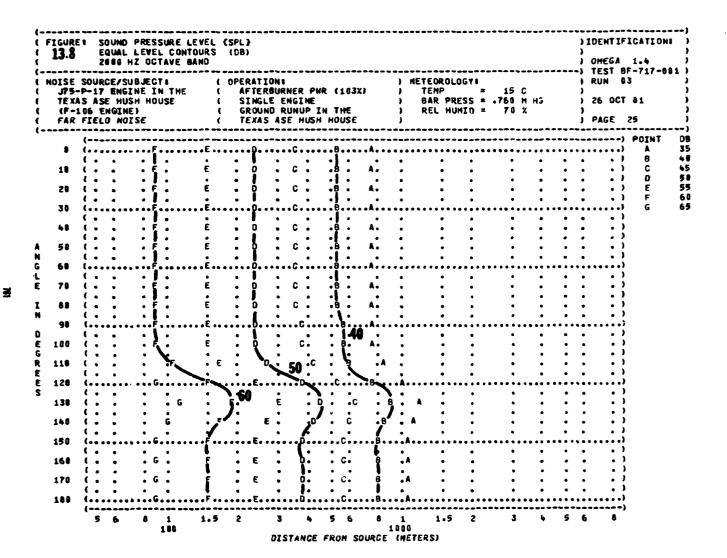


J75-( TEXA: (F-1	P-17 5 ASE 06 En	E/SUB ENGIN HUSH GINE)	HQU	THE SE	(	OFER	TERBU NGLE DUND KAS A	IRNER ENGI RUNU ISE H	ロシャー	HOU	03%) E SE	1	)	METEOR TEMI BAR REL	PRESS		760	M H3		)	TES RUN 26 PAG	OCT	81
18	( ( . ( . ( .	•••••		.6	F   F		Ε .			.c.			A				•	•	• • •			• )	POINT A B C D E
38 40 50	(	•	•	•6		•	Ε. Ε.		•	.c.		3	· · · · · · · · · · · · · · · · · · ·				•	•				••) ••) ••)	G H I
70 80 90	(			.G	6		E	E .	50	c C		40		A			•	•	•••		•	• • • • • • • • • • • • • • • • • • • •	
100 110 120	· · · · · · · · · · · · · · · · · · ·		I	Н	. 79.	G G.	60		EE		c N	c		A		•	•	•	•••		, , ,	• )	
130 148 150	( . ( . ( . ( .	•	·	i 	3		G	, 5 /:	E.	E E	D D	.c .c	8	B A			•	•				• )	
160 170 180		•	•		•	.G	•	F	. E			c	9 <b>9</b> 9	A			•	•			·	•	

(	13.8 HOISE J75- YEXA (F-1 FAR	50UR P-17 S ASI	DO HI CE/SI ENG: E HU:	Z OCI JBJEC ENE : SH HC	EN TH	BAND	( (	PERAT	RBUR LE E	NER NGI LUNU	NE P IN	( TH	Æ	· · · · ·	) ) )	T I	OROLO MP IR PRI	ESS :	76	5 C 0 M H 0 %	iG		) RUI	ST E	81
,	0	(	•		. G	••••	F		.E.	••••				.c.	• • • •		A					•••	••••	)	POINT
	19		:	:	G.		F	:	ε.			}.	:	c.			A .	:		•	:	•	•		Č
	26	( .	•	•	G.		F	•	ε.		: 1	}.	•	c.			A.			•	•			• 1	E
	30	( ( .	••••	••••	. G	••••	· · ·	••••	.E	•••	•	···	•••	.c	• • • •	••••	A	••••	••••		••••	•••	••••	••••	G
	40	( .	•	•	G.		-	•	ε.		: 1	<b>:</b>	•	٠.		3	A.	•		•	•	•	•	• )	1
A	50	( .	•	•	G.	•	F	•	ε.		: 1	<b>}</b> :	•	C.		<u> </u>	A.	:		•	•	•	•	• )	i
G	60	(	_•	_ •	G	••••	· F	•	.E	•••		 I.	•••	.c	•••	••••	A	••••	••••	•	••••	•••	••••	•••)	ı
E	70	( .	:		G.	٠	5	•	Ε.		ì	i.	:	c.	•		A.	•		•	•	•	•	• )	
I N	90	( .	:	•	G.		/F	:	ε.		: 1	•	•	c.	Ż	40	A.	•	•	•	•	•	•	.)	
D	90	(•••	•	••••	•	··· {	•••	•	E	•••	Ď.	50	• • • •	c	····B	• • • • •	•	•	••••	• • • • •	• • • •	· · ·	••••	•••)	,
E	100	( . ( .	:	• (	; ,	1		:	E .		: 🥄	i.	•	G .	· (			:		•	•	•	•	• )	
E	110	( .	:	:	G •	•		× 60	£ •		•		`	Ç.	• •		A.	:		•	•	•	•	• ;	,
S	120	(	•	•	•		• • • • •	٠٠٠ کزيز	••••	••E	•	سد	٠۶٠	••••	.C.	ڑر:		•	••••	• • • • • •	•	•••	•	•••)	
	130	( .	:	•	G.			:	E.	_	: (		•	G.	:		A. :	:		•	•	•	•	. ;	,
	140		•	:	• 6			)	:	E	•	٠.٠	I	• 0	:	•		:	;	•	•	•	•		
	150	(	•	•	• • • • •	••••		•	•	Ε	•	1	•••	••••	•	(		•	• • • • •	• • • • •	•	• • •	•	•••)	
	160	:	•	:	. 6	;	į	•	•	€ -	•	1	•	• •	•		A :	:		•	•	•	•	• )	
	170		•	•	• 6	•		•	:		•	:	•	• 0	•	1		•	•	•	•	•	•	• )	
	180	( (			• • • • •	•••••		••••		E			•••	C		. B				• • • • •		::-		)	,

J75-F	50URG 2-17 5 A SE	UAL EO H ENGI HUS	LEVEL Z OCT/ BJEGT: NE IN H HOU: }	THE	२ <b>ऽ</b> 0		URNER ENGI RUNU ASE H	NE P IN T USH HO	103%) HE		) HETE ) TE ) BA	HP	= 1 S = .76	5 C 8 M H3	· • • • • • • • • • • • • • • • • • • •	-) TES ) RUN ) ) 26	EGA 1.4 ST BF-717-0 N 03 OCT 81 GE 24
0 18 29 38 45 50 60 70 80 90 100 110 120 130 140 150 150 160			6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	F		E E E E E					A A A A A A A A A A A A A A A A A A A	A					POINT
170 180	( . ( . (		) .   .   .	. 6		.   .   .	. E	4 5	1. 0. 1. 0	c		. A	• • • • • • • • • • • • • • • • • • • •	3 4		6	. ) . ) )

¥



Ħ

## **TABLE 14.1**

## TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS TF30-P-100 ENGINE IN THE ASE-TEXAS INC. HUSH-HOUSE, GROUND RUNUP KELLY AFB TEXAS, TEST #BF-718-001 (Engine For The F-111F Aircraft)

Engine Operation	S	ingle Engine
85%	85.1	% RPM
	4057	LBS/HR FF
Military Power	96.1	% RPM
	9252	LBS/HR FF
Afterburner Power	95.5	% RPM
	54956	LBS/HR FF
Meteorology		
Temperature	33	С
Bar Pressure	.743	M Hg
Rel Humidity	50	%
Wind - Speed	2	M/Sec (4 Kts)
- Direction	140	Dog

AD-A118 773

AIR FORCE AÉROSPACE MEDICAL RESEARCH LAB MRIGHT-PATT--ETC F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA MANDROOK. VOLUME 172. HUSH-HOU--ETC(U)
UNCLASSIFIED

AMRL-TR-75-50-VOL-172

So 9
1877

END
9 82

	STANCE =		-								TENO	OI 06 V				)	OMEGA TEST ( RUN (	BF-71	
TF30-P-10	8 ENGINE	IN T	HE	;	85% RP	M				) "	TEMP		•	33 C		;	,	, .	
TEXAS ASE	HUSH HOL	ISE		(	SINGLE	ENGI	NE			3	BAR	PRESS	= .7	63 M	HŞ	)	26 OC1	61	
OISE SOURC TF30-P-10 TEXAS ASE (F-111F E FAR FIELO	MOT2F			ŧ	IEXAS	12F L	IUSH F	THE		)						-	PAGE	2	
FREQ								AN	GLE (										
(HZ)	0	10	20	30	40	50	68	79		90	100	110	120	130	148	150	160	170	18
12.5	81	81	81	81		81	81	81	81	81	81	81	82	81	79	80	88	80	8
16	82	82	82	85		82	82	82	62	88	81	84	81	84	64	83	63	83	8
20	83	83	83	83		83	83	83	83	63	82	63	85	82	79	82	82	82	8
25 31.5	78 79<	78 70<	78 78<	78 70		78 70<	78 70<	78 70<	76 70<	78	79	81 74	8 <b>8</b> 76	81 77	6 Q 7 G	79 78	79 78	79 78	7
31.5 40	65<	65 <	65<	65		65<	65<	65<	65 <	70< 65<		•	72<				74<		•
50	644	66 <	64<	64		644	64<		•	644			66<	• -		71	71	71	7
63	• • •	•••	•••	•		•••	• • •	• • •	•••	• • •	•••	•	644		••	•	• -		•
8.0																			
196												59<	61<	60<	59<				
125	56<	56 <	56<	56	< 56<	56<	56<	56<	56<	56<	57<		60<		59<	56<	56<	56<	5
160												53<	56<						_
200												47<	53<				58<		_
25 0 31 5												44<	50<	734	52<	49<	49<		
40 D																4/4			
500														42<		46<	• •		
63 0													42<	43<		464			
800													42<	43<	40<	44<	444	444	4
1000																44<			•
1250																44<			-
1600															40<	424	42<	42<	4
2000		•	•••	•	. 76 .	<b>.</b> .	36.	75.	<b></b>		•4.		36.	40<		** .		77.	3
250 <b>0</b> 315 <b>0</b>	35< 47	35 < 47	35<	35 47		35 < 47	35< 47	35 < 47	35 < 47	35<	34<	34< 40<	35< 38<	37<	35< 39<		37 < 42	42	- 3 - 4.
400 <b>8</b>	48<	40 <	60<		• •	40<	48<	40<	4/ 40<	40<			36<		_ •	. –			
5000	35<	35 <	35<	35	•••	35<	35<	35 <	35 <	35<			33<			-,			_
6300	40	40	40	40		40	40	48	40	40	32<		32 <	34<		35<			_
8000	30<	36 <	36<	36	• •	36<	36<	36<	36<	36<			31<	324	31<	32<		32<	3
18088	35<	35 <	35<	35	< 35 <	35<	35<	35 <	35 <	35<	29<	28<	23<	30<	29 <	29 <	29 <	29<	21

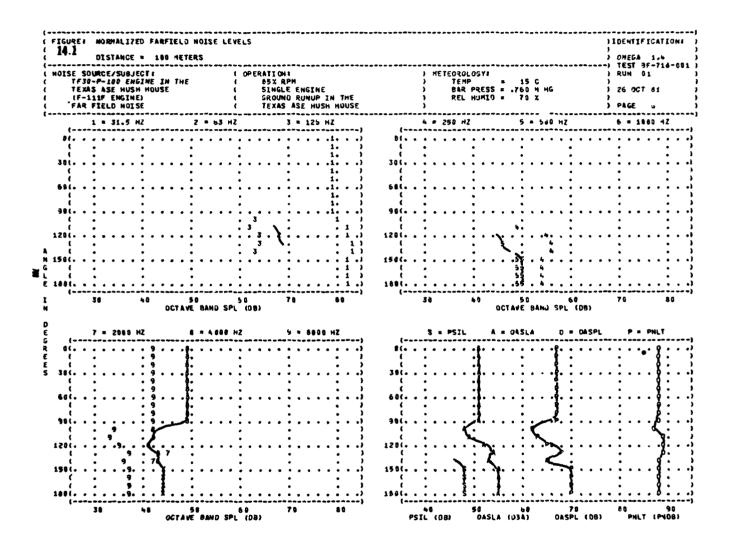
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

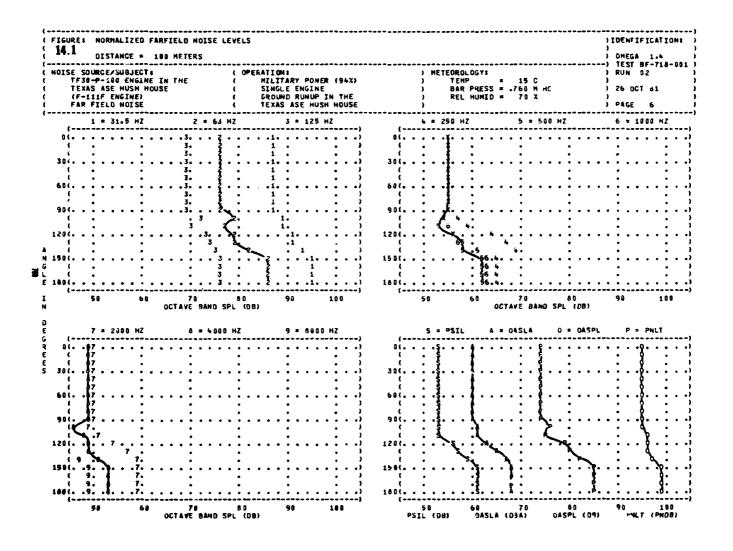
142 1/3 0	RED S CTAVE NCE =	BAND			EVEL											)	DENTII OMEGA TEST I	1.4	
IOISE SOURGE/S TF30-P-100 E TEXAS ASE HU (F-111F ENGI FAR FIELD NO	NGINE SH HO NE)	IN T	HE	( # ( 5 ( G	RATIO ILLITA INGLE ROUND EXAS	KY PO ENGI RUNU	NE P IN	THE		) ME ) ) )	TEMP BAR	OLOGY: PRESS HUNID	= z .7	33 C 43 M 50 %	нз	3		02	
FREQ								AN	GLE (	DEGRE	ES)								
(HZ)	8	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
12.5	87	87	87	87	87	87	87	87	67	87	88	8.6	8.5	86	89	89	69	89	84
16	90	90	90	90	98	90	90	90	90	90	89	89	90	88	88	93	93	93	93
20	89	89	89	89	89	89	89	69	8 9	89	90	91	90	90	90	92	92	92	92
25	86	86	86	86	86	86	86	86	86	85	58	86	8 3	89	91	92	92	92	92
31.5	79	79	79	79	79	79	79	79	73	79	81	84	40	85	66	90	90	90	90
<b>+</b> 0	77	77	77	77	77	77	77	77	77	77	78	79	82	52	ø <b>6</b>	88	86	8.8	88
50	73	73	73	73	73	73	73	73	73	73	74	73	75	77	81	85	85	85	85
63	71<	71 <	71<	71<	71<	71<	71<	71<	71 <	71<	74	73	74	72<		77	77	77	77
8.0	69<	69 <	69<	69<	69 <	69<	69<	69<	59<	69<	724	70<	71<	71<		73<	73<	73<	
100	67<	67 <	61<	67<	67 <	67<	67<	67 <	67 <	67<	70<		71	73	72	74	74	74	74
125	64<	64 <	64<	64<	64 <	64<	64<	64<	54<	64<	67	65<	66	58	7 8	71	71	71	71
160	56<	56 <	58<	58<	58 <	58<	58<	58<	55 <	58<	61<		64	53	67	65	65	65	65
200	53<	53 <	53<	53<	53<	53<	53<	53<	53<	53<	54<	56 <	6.0	62	65	60	60	60	60
25 O	49<	49 <	49<	49<	49 <	49<	49<	494	43<	49<	51<	54 <	51	63	66	62	62 55<	62 55<	62 55
315	46<	46 <	46<	46<	46 <	46<	46<	46<	46<	46<	48<	48<	53<	58	57	<b>∌5</b> <			77 56
400 500	48< 50<	48 < 50 <	48< 50<	48< 50<	48 < 50 <	48< 50<	48<	40< 50<	48 < 50 <	48 < 58 <	48< 58<	46< 48<	50< 52	52<	51<	56 57	56 57	56 57	57
630	51	51 51	51	51	51	51	51	51	51	51	58<	49<	52	52	54	58	58	58	58
800	52	52	52	52	52	52	52	52	52	52	58<	51<	52	52	56	57	57	57	57
1000	48<	48 <	46<	48<	48<	48 <	48<	48 4	92 68 <	92 68<	48<	49<	58<	52<		58	58	58	58
1258	47<	47 <	47<	47<	47 <	67 <	47<	474	47 <	47 <	46<	494	50<	53<		59	59	59	59
1698	46<	46 <	46<	46<	46 <	464	464	464	464	46<	46<	47 <	50	53	56	56	56	56	56
2066	45<	45 <	45<	45<	45 <	45<	454	45 <	45<	45<	464	46<	69<	52	53	52	52	52	52
2500	42<	42 <	424	424	42 <	424	42<	424	42 <	424	424	44	43	47	48	50	50	50	50
3150	42	42	42	42	42	42	42	42	42	42	41	43	45	45	47	48	48	46	48
4080	44	44	44	44	44	44	44	44	44	44	41<	42	43	43	46	47	47	47	47
5098	43	43	43	43	43	43	43	43	43	43	41	41	43	43	46	46	46	46	46
6300	42	42	42	42	42	42	42	42	42	42	39<	40	41	42	44	45	45	45	45
8 9 9 0	41<	41<	41<	41<	41 <	41<	41<	41<	41<	41<	39<	40<	40<	41<	44	45	45	45	45
10000	37	37	37	37	37	37	37	37	37	37	36	36	37	37	40	42	42	42	42

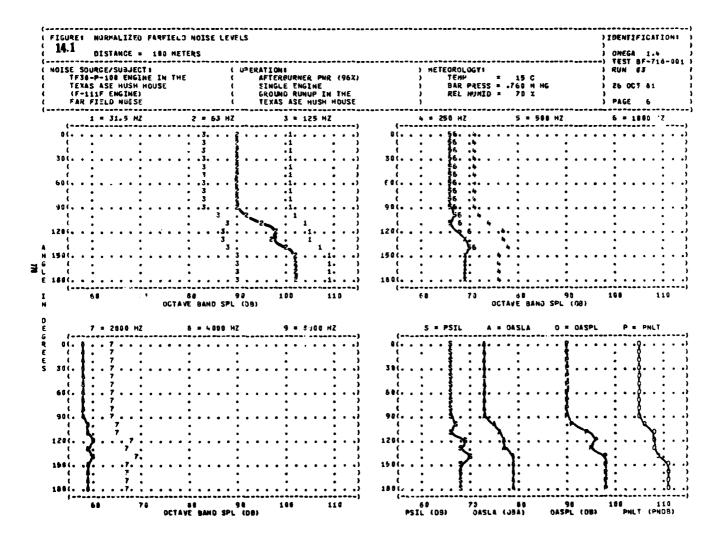
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

14.2 1/	ASUREO 3 OGTAV Stance	E BAN	Ю		LEVEL		· · · · · · ·		••••							) ) 	DENT! OMEG/ TEST		•
OISE SOURCE TF30-P-10 TEXAS ASE	8 ENGIN	E IN	THE	( 01	PERATION AFTER	BURNE	ER PHR	(96 X	)	) H	TEM			33 C		j	RUN 26 00	03	
(F-111F E	NGINE)	0025		(	GROUN	RUI	NUP IN			;		PRESS HUMID		50 %	пэ	)	PAGE	2	
FREQ	~~~~							A/	GLE	(DEGR	EFS)								
(HZ)	•	10	20	30	48	50	60	70	80	99	100	110	120	130	149	150	160	170	188
12.5	96	96	96	96	96	96	96	96	95	96	96	97	96	98	97	106	100	180	166
16	98	98	98	98	98	98	98	98	98	98	99	100	98	100	160	182	182	102	102
2 8	100	100	100	100	100	100	100	100	100	100	99	101	102	99	101	104	194	104	104
25	98	98	98	98	96	98	96	98	98	98	98	180	191	102	103	103	103	103	103
31.5	96	96	96	96	96	96	96	96	96	96	97	100	93	99	101	102	102	102	102
4.0	92	92	92	92	92	92	92	92	92	92	96	97	99	98	101	105	165	105	109
50	86	86	86	86	86	86	86	86	86	86	89	93	9ó	96	99	100	180	100	100
63	85	85	85	85	85	85	85	85	85	85	86	66	91	90	93	96	96	96	96
8.0	63	83	83	83	93	83	83	83	83	83	35	86	87	86	8.6	90	90	90	90
100	81	61	61 78	81	81 78	81 78	81	. 81 78	81	81	84	85	35	85	84	68 84	58	8.8	86
125	78 73	78 73	78 73	76 73	78 73		78 73	73	78	78	8 0 7 <b>6</b>	82	\$2	82 78	83		84	84	84 79
160 280	/ 3 66	68	68	68	68	73 68	68	66	73 58	73 68	70	77 72	79 75	74	79 75	79 73	79 73	79 73	73
25 B	65	65	65	65	65 65	65	65	65	65	65	06	68	72	71	74	70	7 S	70	70
315	63	63	63	63	63	63	63	63	63	63	62	63	67	67	67	69	69	69	69
404	61	61	61	61	61	61	61	61	b1	b1	62	61	63	64	65	64	66	64	64
50 Q	61	51	61	61	61	61	61	61	61	61	62	61	63	63	65	63	63	63	63
630	62	62	62	62	62	62	62	62	62	62	63	61	64	64	66	64	64	64	64
800	63	63	63	63	63	63	63	63	63	63	64	63	65	64	66	64	64	64	64
1000	62	62	62	62	62	62	62	62	62	62	63	63	65	64	66	64	64	64	64
1250	61	61	ő1	61	61	61	61	61	o i	61	62	63	64	64	66	64	64	64	64
1600	61	61	61	61	51	61	61	61	61	61	61	61	64	63	66	63	63	63	63
2000	59	59	59	59	59	59	59	59	59	59	60	60	62	62	63	62	62	62	62
2509	56	56	56	56	56	56	56	56	56	56	57	57	60	58	59	58	58	58	58
3150	54	54	54	54	54	54	54	54	54	54	55	55	57	56	57	56	56	56	56
4004	52	52	52	52	52	52	52	52	52	52	53	53	53	53	55	53	53	53	53
5 0 0 <b>0</b>	51	51	51	51	51	51	51	51	51	51	52	52	51	51	53	51	51	51	51
6300	50	50	50	50	50	50	50	50	50	50	50	50	50	50	52	50	50	50	50
8000	49	49	49	49	49	49	49	49	+9	49	49	49	43	49	50	49	49	49	49
10000	46	46	46	46	46	46	46	46	46	46	46	45	46	46	47	46	46	46	46
OVERALL	105	105	105	105	185	105	183	1 05	105	105	106	197	108	108	189	111	111	111	111

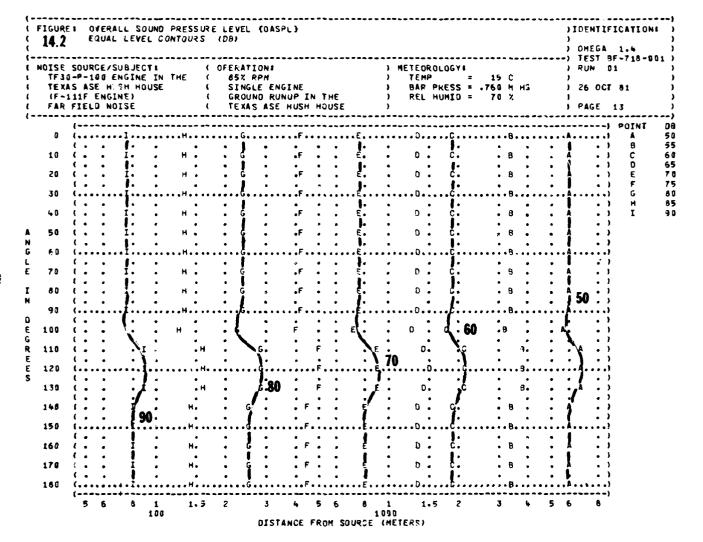
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

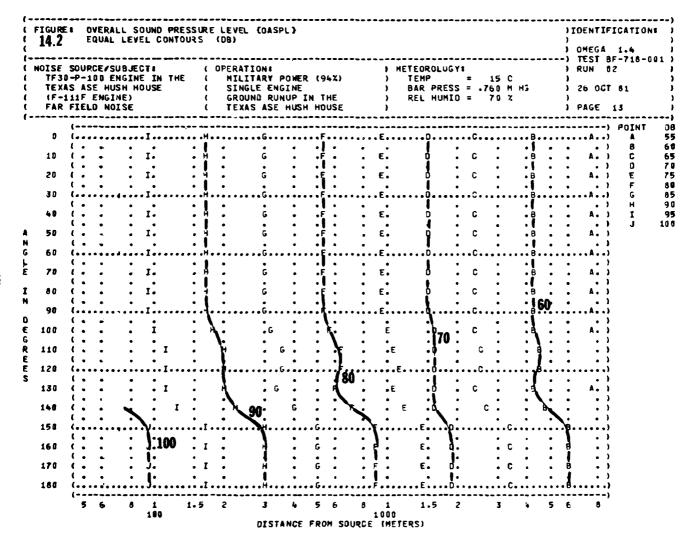


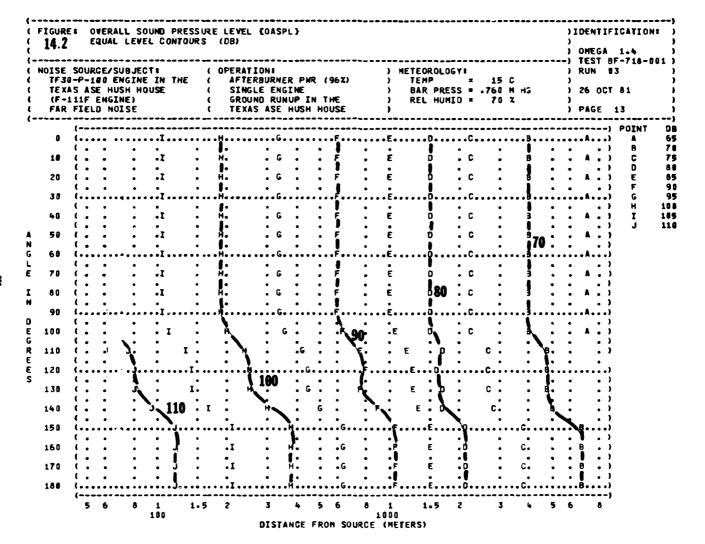


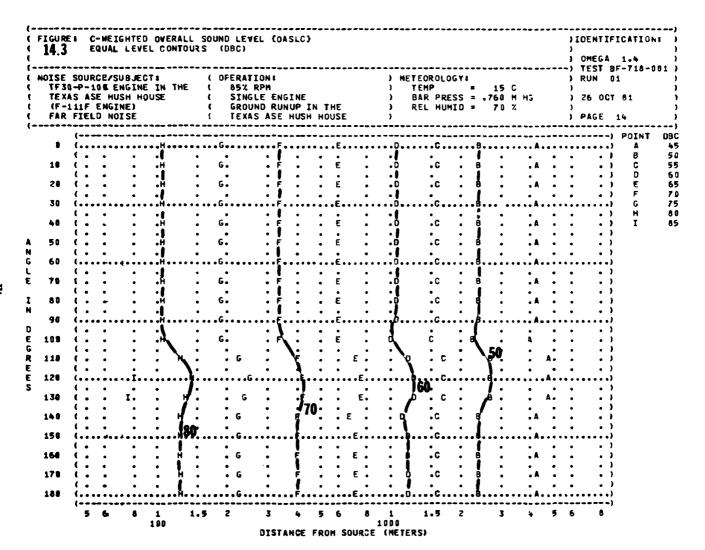


----









DISTANCE FROM SOURCE (METERS)

METEOROLOGYA

3

) IDENTIFICATION:

ONEGA 1.4 TEST BF-718-001

RUN 03

FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)

776

14.3

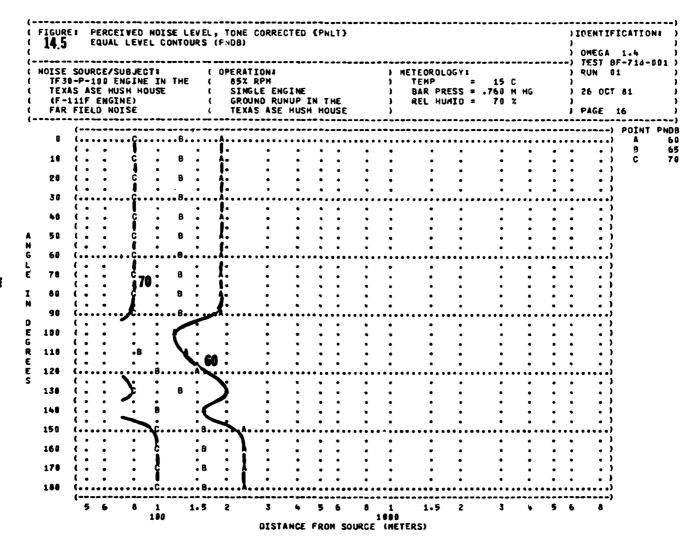
180

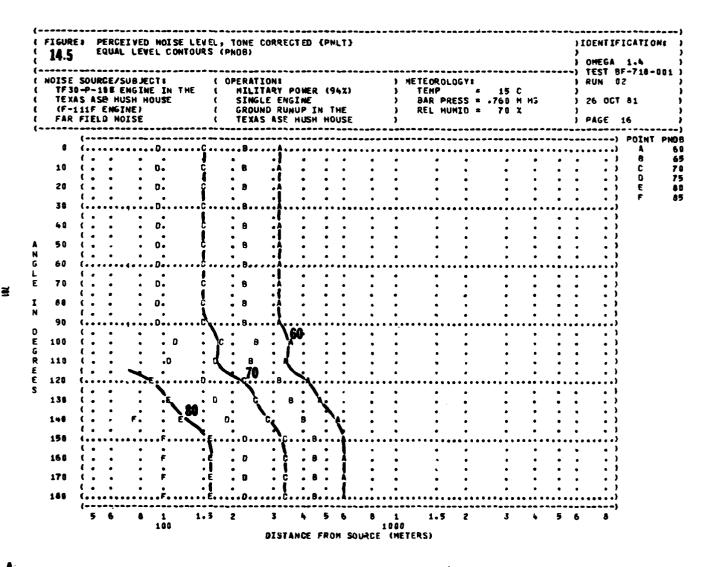
100

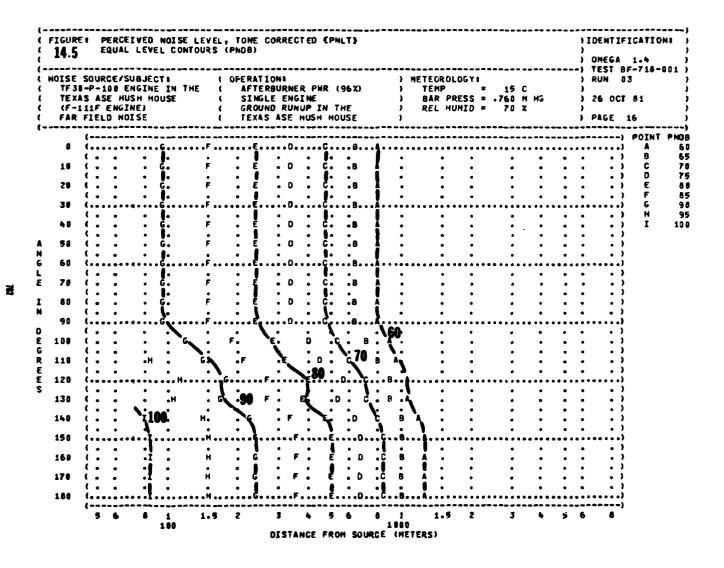
1.5

Ħ

¥







TF30 TEXA (F-1 FAR	SOUR -P-1 S AS 11F FIEL	CB/ 00 E H E NG	BUB ENG USH INE OIS	JECT INE HOU ) E	IN THE	(	DPERATI 85% R SINGL GROUP TEXAS	ON: PH E ENG ID RUN ASE	INE UP II HUSH	N TI	HE USE		) METE ) TE ) BA ) RE )	OROLOG MP R PRES L HUHI	S = .	15 C 760 M 70 X	H3		) RUN: ) ) 26 D ) ) PAGE	C7 81
0	(	•••	•••		•• •• ••	••••				• • • •	• • • • •					•••••	••••	• • • •	•••••	-) POINT
10	( .	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	) B
	<i>:</i> :			•	:			•	:			•	•	•	:	•		:	: :	; Ď
26	( .	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	)
36	ì	٠	•••	••••	•	•••••	•••••	••••	•	•••	•••••	•••••	•	•••••	•	•	••••	••••	•	.;
40	( .	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	)
70	: ;	:		•	•	:	•		:	:	•	:	•	:	:	:	:	:	: :	;
54	•	٠		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	3
60	ì	•••		• • • • •	• •• • • • •	•	• •••••	•	•	•	•		•	•	•	•	•	••••	• • • •	.;
79	٠.	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	)
70		:		•	•	:	:	:	•	:	•	•	•	•	•	•	•	:		,
8 9	•	٠		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	,
98	· · ·	•••	•••		• •• •• •	•	• • • • • • •	•	•	•	•	. <b>.</b>		•	•	• •••••	•	•	• • • • •	.;
.00	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	1
.00	::	:		•	•	•	•	•	:	:	•	•	•	•	:	:	:	:	• •	j
116	( -	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	}
128	i	•••		• ••••	•	•••••	• • • • • • •	•	•	•	•	• ••••	•	•	•	• •••••	•	••••	• • • • •	.i
38	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	• •	)
44	::	•		•	•	:	•	•	:	:		:	•	:	:	•	:	:	•	j
40		•	1	•	•	•	<b>\40</b>	•	•	•	•	•	•	•	•	•	•	•	•	)
150	ì	•••	•••	۶	c	•••••	<b>.</b>	•••••	A:	•	•	•	• •••••	•	•	•••••	•	••••	• • • • • •	.;
168	( .	•	1	<b>50</b>		•	: 1	•	•	•	•	•	•	•	•	•	•	•	• •	}
.90	<b>:</b> :	•		Ĭ	•	:	: 1	:	•	:	:	•	•	:	:	:	:	:	: :	j
178	•	•		5	. c	•	. 6	•	A.	•	•	•	•	•	•	•	•	•	• •	}
. 80		•			• •••••C	•		•	·	•	•	•	• 	•	•	•	•	•	• •	.)

•

ğ

ž

(	14.7 HOISE TF30- TEXA	EQUAL TIME CONTOURS (MINUTES)  GURCE/SUBJECT: ( OFERATION: ) METEOROLOGY: ) 100 ENGINE IN THE ( 85% RPM ) TEMP = 15 C )  S ASE HUSH HOUSE ( SINGLE ENGINE ) DAR PRESS = .760 M H3 )  LIF ENGINE) ( GROUND RUNUP IN THE ) REL HUNID = 70 % )	OMEGA 1.4 TEST BF-718-001 I RUN 01 I
•	10 < 20 < 30 <		)
ANGLE	40< 50< 66<	AT ALL DISTANCES FROM SOURCE EQUAL TO OF GREATER THAN 75 METERS  FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)	) ) ) )
I N O E	80< 90<	NO PROTECTION  HINIMUM QPL EAR MUFFS	) ) ) )
GREES	110< 120< 130<	COMFIT TRIPLE FLANGE EAR PLUGS	) ) ) )
	140 < 150 < 160 <		)
	168<	\$ 6 6 1 1.5 2 3 4 5 6 8 1 1.5 2 3 4 5 6 100 1000 DISTANCE FROM SOURCE (METERS)	) ) )

```
FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
14 7 EQUAL TIME CONTOURS (MINUTES)
                                                                                                          ) IDENTIFICATION : )
 14.7
                                                                                                          ) DMEGA 1.4
                                                                                                          ) TEST 3F-718-001 )
) RUN 02
                                                                      ) METEOROLOGY:

) TEMP = 15 C

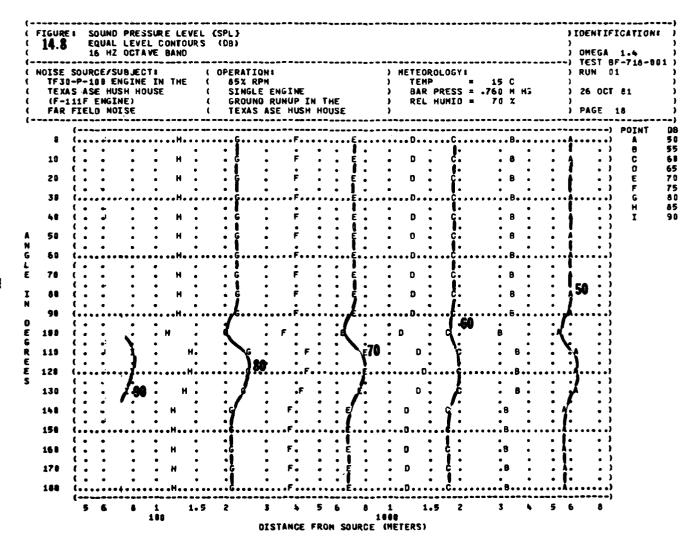
) BAP PRESS = .760 M H3
NOISE SOURGE/SJBJECT:
TF30-P-108 ENGINE IN THE
                                  ( OPERATION:
                                      HILITARY POWER (94%)
  TEXAS ASE HUSH HOUSE (F-111F ENGINE)
                                      SINGLE ENGINE GROUND RUNUP IN THE
                                                                                                          ) 26 OCT 81
                                                                          = CIMUH J3R
                                                                                          70 %
                                      TEXAS ASE HUSH HOUSE
  FAR FIELD NOISE
                                                                                                          PAGE
   0 <
  10<
  20<
  30<
                      PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
  60<
  50<
                      AT ALL DISTANCES FROM SOURCE EQUAL TO OP GREATER THAN
                                                                                      75 HETERS
                      FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
  60 <
                      UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
  70<
                            NO PROTECTION
  80<
  90 <
                            MINIMUM QPL EAR MUFFS
                            AMERICAN OPTICAL 1700 EAR MUFFS
 100<
 110<
                            V-51R EAR PLUGS
 120<
                            COMFIT TRIPLE FLANGE EAR PLUGS
 139 <
                            H-133 GROUND COMMUNICATION UNIT
 140<
 150 <
 160<
 170<
                                                                                                  4 5 6
                      1100
                                                 4 5 6
                                                                             1.5
         5
```

DISTANCE FROM SOURCE (HETERS)

180		5	6		A . B	1	1.5	2	3			6		1		 2	3		5 (	5 8	-)
178		•	•		• ^	•	•	•	•	•	:	•	•	•	•	•	•	•	•	•	) )
166	Ġ	•	:			•	:	•	•	:	•	•	:	•	:	•	:	•	•	: :	)
150	į	•••		•••	A .	- - -	•••••	••••••	•••••	••••	•	••••	••••	•••••	•••••	-	•••••	••••	• • • •		•)
140	Š	•	ز		A	:	:	:	:	:	:	:	:	•	:	•	:	:	•		)
139	(	•	•		•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	) )
120	(	•	•			•		•	•	•	:	•	•	•••••	•			•	•		.)
110	Ì	:	:			•	:	•	:	:	:	•	:	•	•	•		:	•		) )
98	(	••••	•	•	•	•	•	•	•	•	•	•	•	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		• • • • • • •	••••	•	•		·;
80	9	:	:			•	•	•	•	:	:	•	•	•	:	•	:	:	•	: :	)
70	Č	•	:	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	)
60	(	••••	•	• • • •	•	•	• • • • • •	•	•	· <u>:</u> · · ·	:	· •••••	•		· ·····	• • • • • • •	·:···	•••••	•	•	.;
50	(	:	•	4	•	•	•	•	•	•	•	•	•	•	•	•	:	•	•	•	, )
40	(	•	:		•	•	:	•	•	•	•	•		•	•	•	•	:	•		)
30	(	•	•			•	· ·	:	•	: 	:	· ·	•		•	. <i></i>	: •••••	•	•	•	j
18 28	(	•	•		•	•	•	•	•	•	:	•	•	•	•	•	•	•	•	•	)
0	(	•		• • •	••••	•	• • • • •	••••••	•••••					 ••••••		<i></i> • • • • • • •	•••••	••••	• • • •	• • • • •	-) POINT .) A
(F:	-11 R F		NGI NG	NE I	) E		(	GROUN	D RUNI	UP IN	HOU	E SE		REL	HUNI	0 =	70 %		) ! 	PAGE	7
	5 S	P-10	0 E	NG :	JE G T	IN THE	(	OPERATI AFTER SINGL	ON: BURNE	R PHR	(9	6%)		METEO TEM BAR	ROLOG'	Y 1			)	RUN	

걸

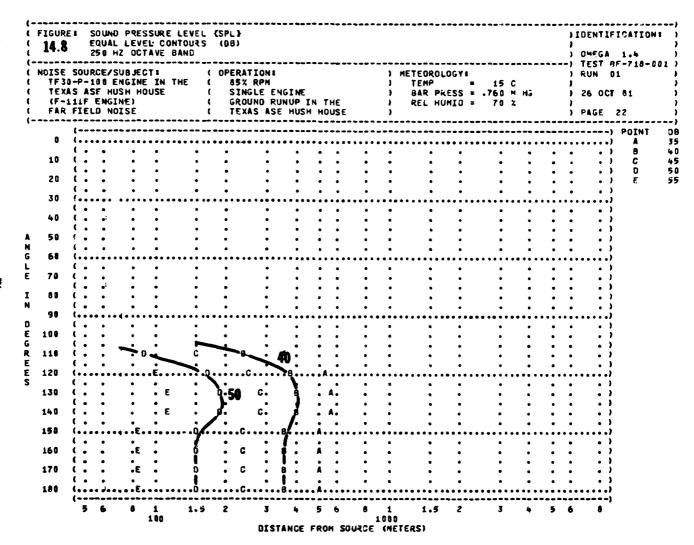
 OISE S TF30- TEXAS (F-1)	) OMEGA 1.4  SOURCE/SUBJECT: ( UPERATION: ) METEOROLOGY: ) RUN 03  PP-100 ENGINE IN THE ( AFTERBURNER PHR (96%) ) TEMP = 15 C )  S ASE HUSH HOUSE ( SINGLE ENGINE ) BAR PRESS = .760 M H3 ) 26 OCT 81  11F ENGINE) ( GROUND RUNUP IN THE ) REL HUMID = 70 % )  FIELD MOISE ( TEXAS ASE HUSH HOUSE ) ) PAGE 8
8< 18< 20<	
40<	( PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY )
50<	AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
60<	( FOR ALL ANGLES EVALUATED (INDIGATED BY < AT LEFT)
78<	UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
88<	HINIMUM OPL EAR MUFFS
90<	AMERICAN OPTICAL 1700 EAR MUFFS
160<	V-51R EAR PLUGS
110<	COMFIT TRIPLE FLANGE EAR PLUGS
120 <	H-133 GRGUND COMMUNICATION UNIT
130<	
148<	
150<	
160<	
178<	
180<	}



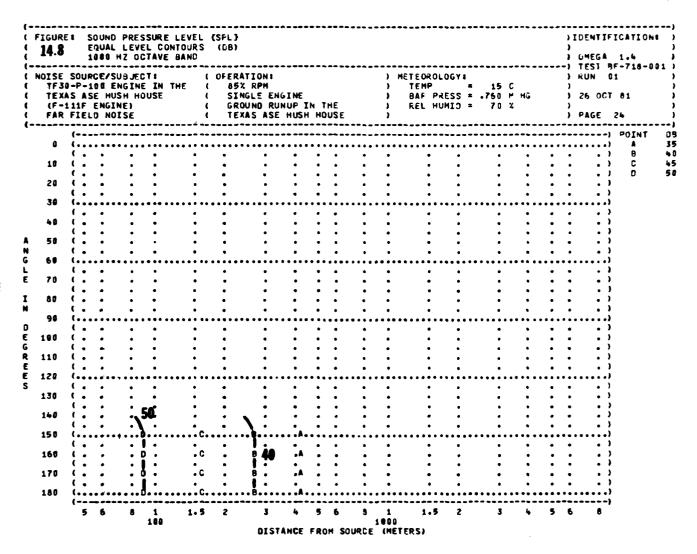
ž

₹

_



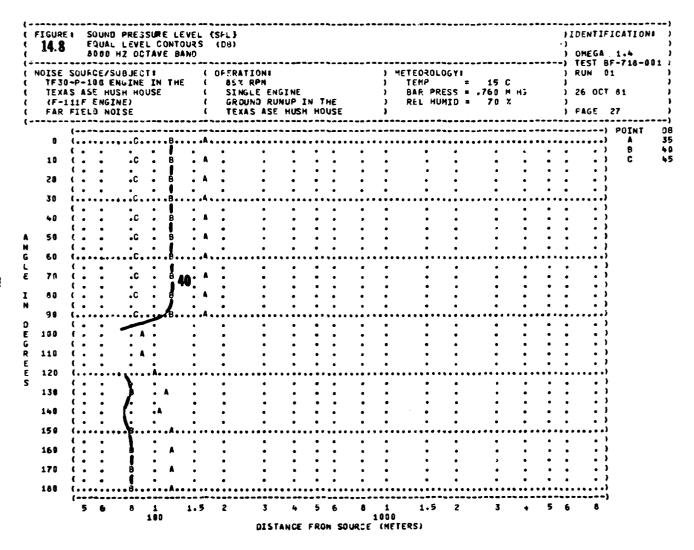
Ì



ä

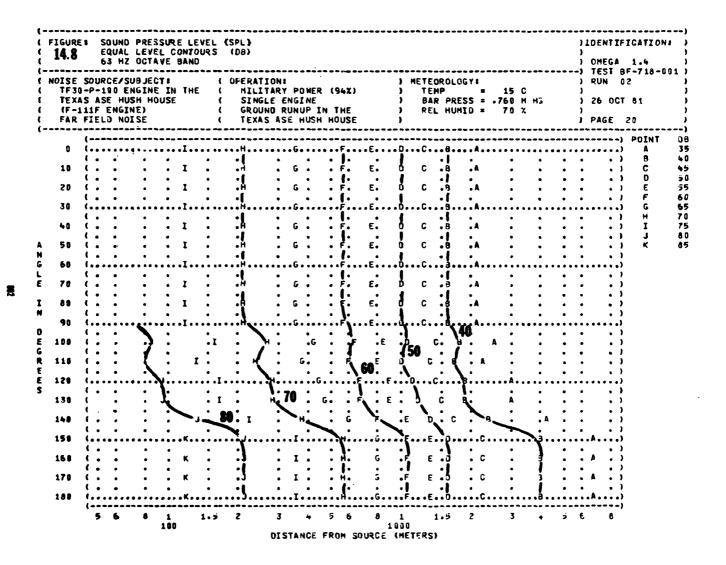
TEXAS	SOURG	E/SUB B ENG	JECT:	IN THE SE	( OF	ERATION 85% RPO SINGLE GROUND TEXAS	M ENGI RUNU ASE H	P IN USH H	1 HE	Ε	1	BAR	ROLOGY P PRESS HUMIC		5 C		) ; ; ;	RUN	8F-718-00 01 CT 81
0 (	( ( ( . ( .	•	.0.	C.		ğ i	 A A	•		• • • •	•		•		 • • • • • • • • • • • • • • • • •	•			-) POINT .) A .) 9 .) C .) D
30 (	( • ( • ( •	•	Ď .	CC	•	] ] [	A A					•	•		•	•			) ) .) .)
50	( . ( . ( .		D	<b>0</b>	•	]   	A						•	•	•	•			) ) .)
70 80		• •		C.	•		Ä	•			•				•	•			) ) )
90 ( 100 ( 110 (	( . ( . ( .	:	c :		^. ^:	3	**************************************	•						· • • • • • • • • • • • • • • • • • • •	•••••	•			•
120 130	( • ( • ( •	• • •	. C			• • • • • • • • • • • • • • • • • • •	•	. ,			•	• • • • • • • • • • • • • • • • • • •	•	· • • • • • • •	• ••••• •	•	•	•	) .) )
140 150	( . ( . ( .	•	c c	1	Α.	.A	• • • • • • • •	•				•	•	• • • • • • • • •	•	•			, , ,) ,)
160 178	( , ( . ( .	•	. c			A	• •	•			•	•	•	) ) )	• •	:	• •		) ) )

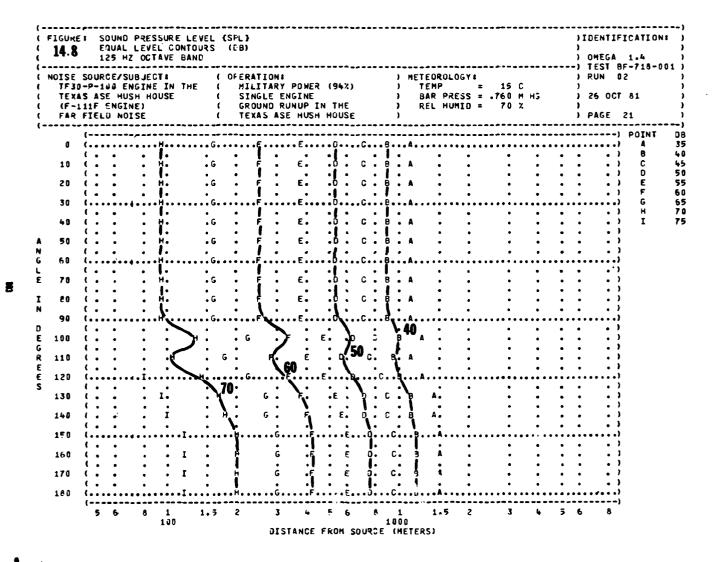
ī



TF30 TEXA (F-1	SOURI -P-1	B HZ CE/SU OO EN E HUS ENGIN D NOI	BJEC GINE H HO E)	TI IN T		( 0	SING	TARY LE E	POW NGINE UNUP	E IN	THE	)		)	TEMP BAP		s =	.76	5 C 3 M H	G	) ) )	RUI 26	OC.	T 51
0 19 20 39 40 58	(					¥ - X - X - X - X - X - X - X - X - X -		6.	•	F			E E E E				. c					A A A		POINT  B C D F G H I
70 60 90 00 10		•		I.	•		•		•			••••	. E . E . E	•		70	. c	C		60		A	A	
30 40 50 60 .70		•		1			***	G	G	<b>\</b>	80		. E			0					8	A	A .	

ISE S TF30- TEXAS (F-11 FAR F	P-10 ASE 1F E	8 ENG HUSH NGINE	INE : HOUS )	IN THE		MII SIN GR	IGLE DUND	Y POI Engii Runuf	ER (' NE P IN JSH H	THE		) ) )		P	* SS =	.760 70	M H3		) TE ) RU ) 26 ) PA	N OCT	
0 ( 10 ( 20 (	•	•	•	1	•			••••	6	•	F	•	ε Ε	1	: : :	•	B	•	.A	• )	POINT A B C D
30 ( 40 ( 50 (		- • • • •		I I	•	• (		• • • •	6	••••	1	•••	.E		: : :	••••	8	••••	 A	• )	F G H I J
60 (6 70 (6 80 (		•		ı	•				G .	•••••		•	E	 	:	•	150 1			• )	
98 ( 100 ( 110 (		· •		1	:: ::	• •		20	G	•	·/;	70.	E E E		c	••••		В		A.)	
120 130 140		•	K	1	·	i	ı				• • • • • • • • • • • • • • • • • • •	•••	\ _\ \	E		с.	C			• • • • • • • • • • • • • • • • • • • •	 
150 160 170		•	•	к К		; ; !:	•••••••••••••••••••••••••••••••••••••••	.I I			•		غ ا ا	.E	<b>&gt;</b>	3	•	.c		<b>18.</b>	





120   50   50   50   60   60   60   60   6	OISE S TF30- TEXAS (F-1: FAR F	SOURC -P-13 S ASE	E/SU B EN HUS NGIN	BJEGT GINE H HOU E)	IN THE	 E	( P	ROUN	ONS ARY P E ENG D RUN ASE	INE	N TH	Ε		) H	ETEOROL TEMP BAR PR REL HU	ESS =	. 76	) H -	13	 1	TE1 PUN 26 (	02 OGT 81
40	10	(	•	•	E E E			c	•	1.	a.	•	•		:	•		•				A B C D
80	40 50		•		•	• [		C	•	. 	a.	•	•		•	•••••		•				G H H H H H H H H H H H H H H H H H H H
110	80 ( 98 (		•	•	E			•	•	8	. A . A	•	•	•	•	•		•	•			
140 ( )	110 120 130		•			). 	)/r	.E	C C C	50 •	B. C.	, , , ,		: 	•			•	•			; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
	140 150		•	<u>ز</u> :	/ <b>U</b> • • • •			) ε.	. E	9:- 6:	) ::c. :c	. c	) 		:	•		•		• •		; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;

Ŧ

VOISE TF30 TEXA (F-1 FAR	SOUR -P-1	OO EN	JBJEC NGINE	TI IN	THE		SII GR(	ITA VGLE DUND (AS	NI RY PO ENGI RUNU ASE H	NE P I USH	(94 N TH	iE ISE			) MET ) ( ) (	TEOROLI TEMP BAR PRI REL HU	OGY ESS	= .70		H3		) TES ) RUN ) ) 26 ) ) PAG	OGT 81	718-01
0 10 20	(	•	•	E	••••	0-0-0-	•	C	•			•	A .	•		•	•	• • • • •	•		•	•	) P( ) .) .)	DINT B C D E F
30 40 50 60	( (	•	•	E			•	C	•	8 8 8 8	•	•	A .		•	•	•		•	•	••••	•	• • ) • ) • ) • )	G
78 80	( . ( . ( .	•	•	ε. Ε.		0 0 0	•	ε.	• • •	8   8			A			•			•				. ) . ) . )	
100 110 120	( . ( . ( . ( .	•	E	E		0	9	C C		B B	4(	).	A				:		•	•	•	•	. )	
130 140	( . ( . ( .	•		`,	<b>60</b>	•	0, E.	50	C D	•	Ċ	`		A N	A				•	•	•		, ) , ) , )	
160 170 180	( . ( . ( . ( . ( . ( . ( . ( . ( . ( .	•	.G	•		•	. 6				•			8	•	A .	•		•	•			, ) , ) , )	

The second secon

.

FIGURE: SOUND PRESSURE LEVEL (SPL)

14.8 EQUAL LEVEL CONTOURS (DB)

ROISE SOURCE/SUBJECT:

TEXAS ASE MUSINE IN THE CONTOURS (FEL)

TEXAS	EQ 86 SOURC P-10 S ASE	UAL I 98 H E/SUI 0 ENG HUSI	PRESSULEVEL Z OCT/ BJECTI GINE 1 H HOUS E) SE	CONT VE B I IN TH SE	OURS AND E	( OP)	B)	NI RY PO Engi Runu Ase h	HER NE P IN USH	(94) TH(	() E SE	1	METE TE BA RE	R PRES	Y: S = D =	15 768 70	C M H3		) ) OM	EGA ST ! N (	T 81	
0 10 20 30 40 50 69 70 89 100 110 120 130 140 158 168			G		8   8   8   8   8   8   8   8   8   8	A A A A															POINT  B C D	
188	5	6	-	1 99	1.	3 2		3 Istan	4	5		10		1.5	2		•	 5		8	5	

.

1000 DISTANCE FROM SOURCE (METERS)

METEOROLOGY: TEMP

.c . . C . . . .

3

) IDENTIFICATION4

RUN 03

26 OCT 81

OMEGA 1.4 TEST 8F-718-881

SOUND PRESSURE LEVEL' (SPL). EQUAL LEVEL CONTOURS (OB) 16 HZ OCTAVE BAND

100

FIGURE :

14.8

170

₹

## DATE FILMED

DT